

**OFFSHORE HELICOPTER SAFETY INQUIRY**

*January 27, 2010*

*Tara Place, Suite 213, 31 Peet Street*

*St. John's, NL*

January 27, 2010

**PRESENT:**

**John F. Roil, Q.C./**

**Anne Fagan.....Inquiry Counsel**

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

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

**D. Blair Pritchett ..... Suncor (Petro-Canada)**

**Alexander C. MacDonald, Q.C./**

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

**Laura Brown Laengle ..... Government of Newfoundland and Labrador**

**Norman J. Whalen, Q.C.....Cougar Helicopters Inc.**

**Jack Harris, Q.C. .... Member of Parliament**

**Allison Battcock ..... Families of Deceased Passengers**

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

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

**Jonathan Tarlton ..... Department of Justice Canada on behalf of  
..... Department of National Defence**

**Major Robert Stoney ..... Office of the Judge Advocate General for the Canadian  
..... Forces**

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1 January 27, 2010  
 2 COMMISSIONER:  
 3 Q. Good morning, ladies and gentlemen. First I  
 4 would like to welcome Colonel Drover from the  
 5 Canadian Forces. He is stationed in Ottawa,  
 6 and also to welcome Major Stoney, who is with  
 7 him, he's from the Office of the Judge  
 8 Advocate General, and, of course, Mr. Tarlton,  
 9 as counsel, who we see from time to time.  
 10 Just a brief word at the outset of this. The  
 11 purpose of our asking Canadian Forces to send  
 12 someone who is knowledgeable and expert in  
 13 matters of Search and Rescue is so that the  
 14 Commission can have an understanding of what  
 15 DND Canadian Forces do, the equipment they  
 16 use, their national mandate, and everything  
 17 about what they do, because that would be of  
 18 value to this Inquiry in determining what  
 19 recommendations may be made to the Offshore  
 20 Petroleum Board, C-NLOPB, in terms of their  
 21 regulation of the oil companies usually  
 22 referred to as the oil operators, and their  
 23 contractee, who is Cougar, which provides what  
 24 I refer to as first response here in St.  
 25 John's. So that is the framework in which I

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1 regard the appearance of someone; namely, the  
 2 Colonel, Colonel Drover, and the purpose of  
 3 his being here, and if necessary, I can  
 4 elaborate on that later. So, Ms. Fagan, are  
 5 you read?  
 6 MS. FAGAN:  
 7 Q. Yes.  
 8 COMMISSIONER:  
 9 Q. Ready, Colonel. Thank you, okay then.  
 10 MS. FAGAN:  
 11 Q. Commissioner, as you've just stated, Colonel  
 12 Drover is the witness for the Department of  
 13 National Defence, and Mr. Drover is the  
 14 Director of Air Force Readiness, Chief of Air  
 15 Staff. The focus, as you've said, will be on  
 16 the mandate and procedures of the Joint Rescue  
 17 Coordination Centres, and in particular, the  
 18 centre located in Halifax. Colonel Drover will  
 19 give us an overview and historical context,  
 20 and we will eventually narrow the focus down  
 21 to the Halifax and the east coast operations.  
 22 As stated before, this phase of the Inquiry is  
 23 data collection phase where the Inquiry seeks  
 24 to obtain information on the current situation  
 25 with respect to helicopter transportation of

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1 workers to the offshore. The Canadian Forces  
 2 of DND provide SAR to the east coast of  
 3 Canada, and Colonel Drover has agreed to  
 4 explain what the Canadian Forces provides in  
 5 the way of SAR. Next week we will hear from  
 6 Cougar Helicopters on what they provide in  
 7 search and rescue and first response services.  
 8 The terms of reference prohibit the Inquiry  
 9 from investigating the location of the  
 10 Department of Defence's resources and we will  
 11 not be dealing with this issue. So I'd ask  
 12 that Colonel Drover be sworn, and then we're  
 13 going to enter the exhibits.  
 14 COMMISSIONER:  
 15 Q. Thank you.  
 16 COLONEL PAUL DROVER (SWORN) EXAMINATION BY MS. ANN FAGAN:  
 17 MS. FAGAN:  
 18 Q. Thank you, Colonel Drover. Colonel Drover has  
 19 been good enough to prepare a PowerPoint in  
 20 discussions and meetings with myself and his  
 21 counsel, and we'd like to have the Powerpoint  
 22 entered as Exhibit 154. Colonel Drover has  
 23 also provided a list of abbreviations and  
 24 acronyms because as all the other witnesses  
 25 have brought in their abbreviations and

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1 acronyms, the Canadian Forces has its own  
 2 specialized language, and that is Exhibit 185.  
 3 In addition, there are two short videos,  
 4 Exhibit 184 and 186. One video is  
 5 approximately four to five minutes. We'll be  
 6 playing that at the beginning, and the other  
 7 video is about a minute, a minute and a half,  
 8 and that will be played at the end. So if we  
 9 could have those four exhibits entered, we can  
 10 then make them available for the public.  
 11 COMMISSIONER:  
 12 Q. Yes, they will be entered.  
 13 MS. FAGAN:  
 14 Q. Colonel Drover, before we begin your  
 15 presentation and play the video, could you  
 16 please provide us with some background  
 17 information on your career and experience?  
 18 I've read your bio and I understand you've  
 19 been the Director of Air Force Readiness since  
 20 October of 2007, but I'm sure there was an  
 21 awful lot of experience to get you there. So  
 22 could you go through that and that would give  
 23 the group a context for when they ask their  
 24 questions?  
 25 COLONEL DROVER:

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1 A. Thank you. It's a pleasure to be here and an  
 2 opportunity to talk about myself off the bat,  
 3 that's good. I am from Newfoundland, as the  
 4 bio states, and actually I attended Memorial  
 5 University and at some juncture during my  
 6 university training, I joined the military in  
 7 the ROTP Program. My first assignment after  
 8 graduation from university was I entered  
 9 flying training out west, and I got my Air  
 10 Force Wings. My first operational flying tour  
 11 happened to be out of Halifax flying a  
 12 maritime patrol aircraft, and this was at the  
 13 time when the 200 mile fishing borders and  
 14 limits were imposed. We did a lot of work for  
 15 the Department of Fisheries and our normal  
 16 patrol area included Sable Island, tail of the  
 17 banks, Flemish Cap, Labrador Coast. So my  
 18 initial flying experience was sort of like  
 19 coming back home, and we did a secondary SAR  
 20 responsibility, so I participated in some SAR  
 21 activity during that first two assignments.  
 22 Following that, I went to Ottawa for my first  
 23 staff job, as it were, and I got involved in  
 24 SAR at a project level. I became Project  
 25 Director of COSPAS/SARSAT which is a satellite

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1 based search and rescue system. I'll be  
 2 talking a little bit more about that in my  
 3 presentation later today. From there, I  
 4 guess, my reward was back flying. I went to  
 5 the west coast, British Columbia, to fly in  
 6 search and rescues on the Buffalo aircraft and  
 7 I was flight commander there for a while.  
 8 Following that, I was promoted to become a  
 9 standards and check pilot for all fixed wing  
 10 Search and Rescue aircraft in Canada, and I  
 11 held that post until they called me back to  
 12 Ottawa for my second time in our higher  
 13 headquarters, this time as a senior staff  
 14 officer and SAR advisor to the Minister of  
 15 National Defence, and I was also an instructor  
 16 part-time for the SAR phase of fixed wing  
 17 aircraft. I returned to Comox. This time as  
 18 a squadron commander at 442 Squadron. I was  
 19 in charge of fixed wing and rotary wing SAR  
 20 aircraft and I also flew the fixed wing  
 21 aircraft as well. Following that, I had  
 22 subsequent assignments not SAR related, until  
 23 I returned to Ottawa in, I guess it was '06,  
 24 and I was a special project officer and I  
 25 rewrote the MADP Plan and that's a Major Air

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1 Disaster Plan that Canadian Forces maintains.  
 2 After that project was complete, I joined the  
 3 Air Force Staff in my current position, and  
 4 among other responsibilities, I'm responsible  
 5 for SAR policy, ministerial support liaison  
 6 with other agencies, I particulate in ICSAR  
 7 which is an interdepartmental organization  
 8 which I'll brief on a little later, and I'm  
 9 also a member of the Arctic Council SAR Task  
 10 Force.  
 11 MS. FAGAN:  
 12 Q. And I don't want to say that's it.  
 13 COLONEL DROVER:  
 14 A. That's the SAR relation, at least.  
 15 MS. FAGAN:  
 16 Q. That's your SAR experience, and I asked you to  
 17 focus on that and I appreciate it. I  
 18 understand you have some opening remarks and  
 19 then we're going to ask the technician and  
 20 registrar to play the video. So could you  
 21 provide your opening remarks?  
 22 COLONEL DROVER:  
 23 A. Yes, ma'am. Mr. Commissioner, thank you very  
 24 much for the opportunity to appear today  
 25 before the Inquiry on behalf of the Department

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1 of National Defence. Firstly, I wish to offer  
 2 my condolences to the families and friends of  
 3 those who were lost in the crash of Cougar  
 4 Flight 491 on March 12th '09. I've been asked  
 5 to provide information regarding federal  
 6 aeronautical and maritime search and rescue.  
 7 I have noted that there's been various  
 8 references to the federal SAR in previous  
 9 testimony. For the most part, the information  
 10 provided has been accurate, with a few  
 11 exceptions. During my presentation, I intend  
 12 to provide corrections as appropriate.  
 13 Mindful of the use of acronyms, which you just  
 14 mentioned, I will endeavour to avoid using  
 15 acronyms, or least attempt to explain their  
 16 meaning. Some of the slides will have  
 17 abbreviations for sure and that glossary may  
 18 be of help. In previous testimony, there was  
 19 a reference mostly to DND, Department of  
 20 National Defence. I will use that term, but I  
 21 will also use the term CF Canadian Forces, and  
 22 they're for all intents and purposes  
 23 interchangeable. I guess we can probably  
 24 start the video.  
 25 MS. FAGAN:

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1 Q. Okay. Could you just explain a little bit  
 2 about the video before we actually hit the  
 3 play button?  
 4 COLONEL DROVER:  
 5 A. There's two segments. The first segment is an  
 6 initial explanation of our Search and Rescue  
 7 Satellite Based Beacon System. Again it's  
 8 important later when I discuss this. It'll  
 9 give you just a little graphic, how it works,  
 10 and the remaining is just a series of SAR  
 11 clips of our team in action, so to speak, and  
 12 it's sort of self-explanatory in that regard,  
 13 so over to you.  
 14 MS. FAGAN:  
 15 Q. Okay. So that's Exhibit 184.  
 16 (VIDEO PLAYED)  
 17 Getting to an incident quickly can make  
 18 the difference between life and death of  
 19 victims. One key tool that minimizes search  
 20 time is an international satellite alerting  
 21 system called COSPAS/SARSAT. COSPAS/SARSAT  
 22 satellites act as a moving high altitude space  
 23 antenna picking up distress beacon signals and  
 24 relaying these signals back to earth. Earth  
 25 stations then calculate the location of the

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1 signal and forward that information to Search  
 2 and Rescue authorities at the Canadian Mission  
 3 Control Centre, or CMCC, also located in  
 4 Trenton. Search and Rescue forces have used  
 5 the information provided by the COSPAS/SARSAT  
 6 satellite system to respond to approximately 8  
 7 to 12 percent of all SAR incidents in  
 8 Canada.  
 9 (VIDEO ENDED)  
 10 MS. FAGAN:  
 11 Q. Thank you for bringing in that video, and as  
 12 we go through your presentation, you may refer  
 13 to the odd picture or the odd activity that  
 14 we've seen in the video, at least it gives us  
 15 a visual, and I now ask that the PowerPoint  
 16 presentation be brought up and we'll get into  
 17 the detail. That's Exhibit 154. As I  
 18 understand it, Colonel, you have broken your  
 19 presentation to four sections, and the first  
 20 is the historical context. So I'd ask you to  
 21 take us through those slides.  
 22 COLONEL DROVER:  
 23 A. Okay, thank you. Just one comment on the  
 24 video, obviously it was a training video. It  
 25 did sort of show some of the sequences, some

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1 of the involvements, and I will elaborate on  
 2 some of those skills and capabilities, and at  
 3 the end for one minute we'll show some more  
 4 realistic weather conditions. That's not the  
 5 kind of conditions that Search and Rescue  
 6 normally gets the opportunity to work in, it's  
 7 usually more challenging. I've got quite a  
 8 bit of material to go through and my intent is  
 9 to sort of do it in a sequential manner so  
 10 that I can give you an understanding of where  
 11 our mandate comes from and what our mandate  
 12 is, and how we actually do fulfil our mandate.  
 13 It will be in four sections, starting with  
 14 historical context, and I won't spend too long  
 15 there. I'll just talk a little bit our  
 16 organization, or SAR capabilities and  
 17 resources, and finally some operations with  
 18 some statistics of how active we are across  
 19 the nation, and the focus, of course, is  
 20 federal which is the responsibility for Canada  
 21 as a whole and all our international  
 22 obligations, but I will sort of emphasize the  
 23 east coast when it's applicable as well.  
 24 After World War II, in Canada we had a marked  
 25 increase in activity, both aviation and

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1 maritime. There was exploration in the north.  
 2 What we did not have in place at that time was  
 3 an organized search and rescue system. We  
 4 certainly had instance where there was search  
 5 and rescue required. It was usually done at a  
 6 local level. A lot of times it was run by the  
 7 RCMP. What was recognized, there was a need  
 8 for a structured SAR organization, highly  
 9 trained personnel, specialized equipment and  
 10 facilities to control and coordinate the  
 11 response, and you'll see when I go through my  
 12 briefing that the control and coordination  
 13 actually is the key enabler to our SAR System,  
 14 as robust as it is, so we'll discuss. It was  
 15 at the federal level the first attempts to  
 16 establish some kind of coordinated capability.  
 17 There were four departments that were involved  
 18 and these are listed here; Justice, Defence,  
 19 Fisheries, and Transport. The initial  
 20 direction of this interdepartmental committee  
 21 on search and rescue, ICSAR, which I'll be  
 22 referring to in subsequent slides, was to make  
 23 sure of existing resources and services  
 24 wherever possible and structure them to  
 25 provide adequate response capabilities to be

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1 made in the most economical manner, compatible  
 2 and reasonable efficiency, and these tenants  
 3 kind of have been in vogue ever since, as you  
 4 will see. In 1947, the Federal Cabinet made  
 5 several decisions. The RCAF, which is the  
 6 Royal Canadian Air Force, which is a  
 7 predecessor to the Canadian Forces, was to  
 8 provide and coordinate aeronautical search and  
 9 rescue services, and this was fairly  
 10 applicable because at the end of World War II  
 11 the Air Force was a fairly substantial  
 12 organization and with fewer missions than  
 13 during the war years for sure, so they did  
 14 some flying in the north and it was  
 15 appropriate for many reasons that the Air  
 16 Force be given the SAR mandate. For the ICSAR  
 17 interdepartmental committee, Defence was given  
 18 the chairmanship of that committee, and they  
 19 recognized the need for a coordination aspect  
 20 and they established the rescue coordinating  
 21 centres. Again I will brief you more in depth  
 22 on that capability. The idea, of course, was  
 23 to capitalize on existing capabilities,  
 24 resources, and command structure. So it was  
 25 basically an overarching command and control

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1 organization to some extent. In 1951, the  
 2 maritime search and rescue mandate was added  
 3 to that. So if we look at the Air Force and  
 4 its mandate, it's the primary responsibility  
 5 for the provision of aeronautical search and  
 6 rescue services and the effective operation of  
 7 the coordinated aeronautical and maritime  
 8 search and rescue system, and those remain  
 9 valid today. So in 1960, the formation of the  
 10 Canadian Coast Guard gave them the mandate for  
 11 on water provision of maritime search and  
 12 rescue and Coast Guard officers, as marine  
 13 coordinators, were introduced into rescue  
 14 coordinating centres, and we refer to our  
 15 centres as "joint", and joint meaning that the  
 16 Military and Coast Guard work side by side in  
 17 the same centre coordinating the same  
 18 incidences. We had some activity within the  
 19 military around the 60s where we unified our  
 20 Tri-Service, and we retired the term "Canadian  
 21 Air Force", RCAF, for the Canadian Armed  
 22 Forces and air elements. The Air Force was  
 23 restructured, it was downsized, but through  
 24 all of that downsizing and changing missions  
 25 and roles, actually the SAR mission was

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1 retained as a whole, so it had -- it was not  
 2 downsized or impacted. The approach to  
 3 federal SAR is one where critical importance  
 4 of search and rescue is reflected in a multi-  
 5 jurisdictional approach to promoting  
 6 individual, collective, and organizational  
 7 behaviours that minimize the risk or injury or  
 8 loss of life and maintaining timely and  
 9 effective response. It's important to note  
 10 that the multi-jurisdictional is a key phrase  
 11 and that speaks to the number of agencies that  
 12 are actually involved, so it's not the  
 13 exclusive domain of Coast Guard and the  
 14 Canadian Forces to deliver SAR, and as we'll  
 15 see, I'll elaborate on that. Two main  
 16 objectives in the SAR program is to influence  
 17 individuals and organizations on the  
 18 assessment of risk and the importance of  
 19 acquiring and using appropriate knowledge  
 20 skills and equipment. it speaks to  
 21 prevention. If we can prevent individuals  
 22 from getting harms way through safe practices,  
 23 through education, through training, we will  
 24 eliminate the need for the response. However,  
 25 when a response is required for whatever

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1 reason, we need to ensure that the SAR  
 2 response capability is available for those in  
 3 need. Stated differently, I have a dynamic  
 4 called a survival dynamic, so you take the two  
 5 program objectives, one being prevention, and  
 6 the other being response. First of all  
 7 prevention is the preferred sort of focus  
 8 where again, as I previously mentioned, if we  
 9 can train and ensure that our individuals or  
 10 organizations are mindful of safe practices,  
 11 and to prevent the accidents, and some of this  
 12 may have to do with regulation, then we would  
 13 sort of eliminate the need for response.  
 14 Realistically there will be requirements for  
 15 response at times because the best prevention  
 16 programs out there will not prevent the  
 17 occurrences that are unforecasted,  
 18 unpredictable, that would entail equipment  
 19 failures and the like, so there will always be  
 20 a need for response. There is definitely an  
 21 objective to invest in prevention to the  
 22 extent possible. So when response becomes  
 23 necessary, we have an obligation to provide  
 24 resources that can respond in a timely manner  
 25 and a capable manner for those responses.

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1 Clearly the quicker that that SAR service can  
 2 be delivered, the better for those in need.  
 3 In the middle, I draw your attention to the  
 4 survival dynamic. This speaks to a time gap  
 5 between the incident occurrence and when the  
 6 rescue can be effected. In just about all  
 7 cases, it's not realistic to assume that as  
 8 soon as an incident occurs, rescue will be  
 9 available. There's going to be some time.  
 10 There's many variables that would go into the  
 11 time equation; the distance from your  
 12 resources, the weather factor, the time it  
 13 would take to notify the alerting agencies.  
 14 I'll get into more of this later in my  
 15 presentation. For now it's important to note  
 16 that there is another piece that is sort of  
 17 aligned with prevention, is for individuals to  
 18 be prepared to be able to survive in a  
 19 situation pending a rescue. So a case that we  
 20 had, as a matter of fact yesterday, we had a  
 21 hunter who was adrift on an ice flow in  
 22 Resolute Bay and it took us a couple of days  
 23 for various reasons to rescue him. We had an  
 24 aircraft fairly quickly on scene to deliver  
 25 some radios and things like that. This

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1 individual was a native hunter, he was  
 2 familiar with the environment, and he had the  
 3 proper equipment to survive and he was fine,  
 4 and that speaks to again dressing for the  
 5 environment or whatever it takes. So it takes  
 6 a while to deliver SAR services and survival  
 7 requirements kicks in, and that's basically,  
 8 as I explained here, the essence, I guess, of  
 9 our SAR structure. A few words on our  
 10 organization, who at the federal level have  
 11 some activity or some roles to play in search  
 12 and rescue. I'll start with the large box in  
 13 the center. I've already introduced ICSAR as  
 14 the Interdepartmental Committee on Search and  
 15 Rescue. Currently there are six players, six  
 16 departments, that have a role; Canadian  
 17 Forces, Transport Canada, RCMP, Environment,  
 18 Parks, Canadian Coast Guard. There are also  
 19 at the federal level, observers; PCO, Treasury  
 20 Board, Safety, Provinces and Territories.  
 21 I'll speak a little bit about the provinces  
 22 and territories. Part of the national  
 23 program, national SAR program, they have a  
 24 responsibility basically for land SAR.  
 25 Federally -- they're not connected federally

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1 in terms of that responsibility, but because  
 2 of the SAR being a national program, there is  
 3 a liaison function that takes place between  
 4 the provinces at the federal level. We also  
 5 have a National SAR Secretariat, and I'll  
 6 explain a little bit what its role is in  
 7 subsequent slides. So for interdepartmental,  
 8 there's six departments I mentioned. The NSS,  
 9 the National SAR Secretariat, actually chairs  
 10 this Interdepartmental Committee, and they  
 11 also are advisors to the lead Minister of SAR.  
 12 The CF is responsible for the aeronautical SAR  
 13 and overall coordination of the RCCs. Coast  
 14 Guard has responsibility for the maritime  
 15 piece, and the RCMP is a spokesman for non-  
 16 federal, Parks Canada being National Parks,  
 17 and Transport Canada, for SAR prevention  
 18 activities and meteorological services, which  
 19 is Environment. So federally, there is a  
 20 single spokesman for the Federal Government on  
 21 all matters of SAR, and the Prime Minister has  
 22 identified the National Defence Minister as  
 23 the lead Minister for SAR, so we'll see that  
 24 term LMSAR, spokesperson for the Federal  
 25 Government. There are two independent bodies;

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1 the Interdepartmental Committee on Search and  
 2 Rescue, which I've already discussed, and the  
 3 second one is the National SAR Secretariat,  
 4 independent body outside the lines of  
 5 authority of SAR delivery, coordinates,  
 6 promotes, and reviews the national SAR  
 7 program.  
 8 MS. FAGAN:  
 9 Q. We heard evidence earlier, a presentation, and  
 10 there was a slide and PowerPoint put forward  
 11 by the joint oil operators, and I know you've  
 12 had the opportunity to review the  
 13 presentations, and in that presentation it  
 14 appeared that the National Secretariat was in  
 15 the direct line of reporting, and actually  
 16 between all of these groups and the Minister.  
 17 Would that be accurate or is it slightly  
 18 different than -- the slide may not have meant  
 19 anything, in particular.  
 20 COLONEL DROVER:  
 21 A. No.  
 22 MS. FAGAN:  
 23 Q. It's just --  
 24 COLONEL DROVER:  
 25 A. There was that slide and some testimony that



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1 may have been, depending on how you interpret  
 2 it, as putting the NSS in some kind of a  
 3 responsibility or chain of command in the  
 4 structure, and that's not the case. NSS is an  
 5 advisory organization, it's a secretariat, to  
 6 advise the Lead Minister SAR. They talk about  
 7 policy and they can talk about coordination  
 8 and communication and things like that, but  
 9 there's no -- there is no decision making  
 10 authority or the like in that organization.  
 11 So it's aside from what I will explain here in  
 12 a moment, how the military sort of reports up  
 13 and down.  
 14 MS. FAGAN:  
 15 Q. Okay. Does this Secretariat -- it's not this  
 16 Secretariat that chairs the group, the six  
 17 departments?  
 18 COLONEL DROVER:  
 19 A. It is.  
 20 MS. FAGAN:  
 21 Q. It is. So that may be where the impression  
 22 is.  
 23 COLONEL DROVER:  
 24 A. Possibly.  
 25 MS. FAGAN:

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1 Q. That where the chair the group, maybe somehow  
 2 they're in the line of command, but they're  
 3 not?  
 4 COLONEL DROVER:  
 5 A. To make it perfectly clear, the  
 6 Interdepartmental Committee on Search and  
 7 Rescue is not in that line authority either.  
 8 MS. FAGAN:  
 9 Q. Okay.  
 10 COLONEL DROVER:  
 11 A. So both bodies essentially become advisory  
 12 bodies, but obviously if you have all the  
 13 departments that have a responsibility for SAR  
 14 in one committee, if you will, through  
 15 consensus, that information will be passed to  
 16 the Lead Minister of SAR. So they serve in  
 17 that capacity, as opposed to when Coast Guard  
 18 or DND have mandates for the delivery of SAR,  
 19 that is a responsibility passed down and  
 20 authorities not through ICSAR.  
 21 MS. FAGAN:  
 22 Q. So who would be in the line of command or the  
 23 chain of command?  
 24 COLONEL DROVER:  
 25 A. Well, the Minister has given the Defence that

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1 responsibility that I mentioned for  
 2 aeronautical, and so through our Chief of  
 3 Defence staff down to the air staff, and I  
 4 have actually charts that will explain --  
 5 MS. FAGAN:  
 6 Q. So the chain of command goes from Minister  
 7 down through Defence, and these other groups  
 8 are involved and consulted?  
 9 COLONEL DROVER:  
 10 A. Right, yeah, that makes it.  
 11 MS. FAGAN:  
 12 Q. Okay, thank you.  
 13 COLONEL DROVER:  
 14 A. So again talking to our friends, the NSS, and  
 15 this is the -- what I've just mentioned. So  
 16 it's a managerial role to facilitate the  
 17 cooperation, communication, and coordination.  
 18 They don't have department's budgets, for  
 19 instance, there's no authority to do equipment  
 20 procurement. They can make recommendations  
 21 saying that this should happen. That's the  
 22 role basically. I mentioned -- again of our  
 23 six partners, the two largest departments in  
 24 terms of SAR delivery are the Coast Guard and  
 25 the Canadian Forces, and you can see here the

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1 Coast Guard provide maritime component for  
 2 maritime response, and maritime is a response  
 3 coordination through the Joint RCCs, and  
 4 there are some sub-centres, and I'll brief  
 5 those separately as well that the Coast Guard  
 6 actually mans totally, and from DND, again as  
 7 was mentioned, our particular role. The  
 8 bottom line is the overall effectiveness,  
 9 operation, and the coordinated aeronautical  
 10 and maritime search and rescue system.  
 11 MS. FAGAN:  
 12 Q. Just one question before you move to the next  
 13 slide, the Canadian Coast Guard, is that an  
 14 independent department or is that part of the  
 15 Department of Fisheries and Oceans? Like, as  
 16 a Minister, where is the chain of command  
 17 there?  
 18 COLONEL DROVER:  
 19 A. It's the Department of Fisheries, but the --  
 20 MS. FAGAN:  
 21 Q. So the Department of Fisheries.  
 22 COLONEL DROVER:  
 23 A. The Coast Guard has a Commissioner, a  
 24 structure, and an organization in that  
 25 department.

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1 MS. FAGAN:  
 2 Q. So if there was a Coast Guard issue, it would  
 3 ultimately go up the chain to the Minister of  
 4 Fisheries, that would be the Minister  
 5 responsible?  
 6 COLONEL DROVER:  
 7 A. That is correct.  
 8 MS. FAGAN:  
 9 Q. Okay, and the Canadian Forces, it would be the  
 10 Minister of National Defence?  
 11 COLONEL DROVER:  
 12 A. That is correct.  
 13 MS. FAGAN:  
 14 Q. Okay, thank you.  
 15 COLONEL DROVER:  
 16 A. So for the CF then, the responsibility and  
 17 execution of search and rescue activities rest  
 18 with the Commander of Canada COM. We have  
 19 different commands, and this particular  
 20 command basically is responsible for all  
 21 domestic -- which is in Canada, military  
 22 bases, formations, operations, and the like,  
 23 and they are the operational authority for  
 24 search and rescue. When I brief on the Rescue  
 25 Coordinating Centres, this is their superior

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1 command structure, Canada COM. The Chief of  
 2 the Air Staff, that's part of the organization  
 3 that I work with, is a Staff function to  
 4 provide the capability for search and rescue.  
 5 So we basically equip and train our personnel  
 6 in our organization, we do strategic policy,  
 7 we liaison with our NSS folks, and with ICSAR,  
 8 and other national and international partners.  
 9 So every good briefing should have diagram,  
 10 and I won't spend a lot of time on this  
 11 particular chart, but it does sort of outline  
 12 in terms of command and control relationship  
 13 what I will brief on separately. So just take  
 14 it from the top very quickly it's the CDS,  
 15 Chief of Defence Staff, who passes that  
 16 authority to the Canada COM, and from the  
 17 Canada COM, he has authority over three search  
 18 and rescue regions. Each of these regions has  
 19 a commander, and I'll brief that separately as  
 20 well. In each of those regions, we have a  
 21 Joint Rescue Coordinating Centre, which we  
 22 will talk about, and there are two maritime  
 23 sub-centres. Below that, basically what I  
 24 call the response delivery, and those are all  
 25 our primary assets, both in the air and in the

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1 Coast Guard, as well as volunteers, and it  
 2 speaks a little bit to the ground SAR  
 3 responsibility. So in terms of the mandate  
 4 we're derived from, constitutionally the  
 5 federal government has a responsibility for  
 6 coastal and ocean search and rescue, and  
 7 federally that includes the St. Lawrence  
 8 Seaway, the Great Lakes, the Canadian part of  
 9 the Great Lakes, and, of course, it speaks to  
 10 all the land masses within Canada itself. The  
 11 provincial governments have responsibility for  
 12 inland ground and water searches. So all the  
 13 large lakes in Canada is not a federal  
 14 responsibility in the first instance, and we  
 15 can talk a little bit later about when it  
 16 becomes so. A fairly large area, we're  
 17 talking 1000 nautical miles in the North  
 18 Atlantic out to the Pacific, and up to the  
 19 Arctic. I'll have a larger map to break out  
 20 the regions, but essentially we're looking at  
 21 50 million square kilometres. The boundaries  
 22 actually extend beyond our coastlines.  
 23 Through international organizations such as  
 24 ICAO, which is the International Civil  
 25 Aviation Organization, and IMO, the

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1 international boundaries for search and rescue  
 2 have been determined so that there's no part  
 3 of the earth that's not in somebody's area of  
 4 responsibility. So our area will extend half  
 5 way to the UK for eastern ocean reaches.  
 6 Through those conventions we have basically  
 7 assigned conventions that give us the  
 8 responsibility for certain SAR provisions. We  
 9 provide the SAR service for those areas by  
 10 treaty agreement. That's a larger picture of  
 11 the area. This will actually highlight the  
 12 three regions and we take in our area of  
 13 responsibility, and what we've done is we've  
 14 divided it into three areas, and you'll notice  
 15 the smallest of the three is Victoria, and  
 16 second is Halifax, and Trenton is by far and  
 17 away the largest. There's good reason for  
 18 that. The number of incidents, the challenges  
 19 on the west coast with the mountainous  
 20 regions, and east with the coastal  
 21 responsibilities and maritime activity, and  
 22 each of those regions we have a Rescue  
 23 Coordinating Centre and the various units and  
 24 sub-centres.  
 25 MS. FAGAN:

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1 Q. Before you go off this page, could you tell us  
 2 where the statutory and regulatory regime is  
 3 for the provision -- you said it's federal.  
 4 So would it be in federal legislation?  
 5 COLONEL DROVER:  
 6 A. That's correct. Actually, the British North  
 7 America Act, which is the division of powers  
 8 and responsibilities, the federal government  
 9 was given the responsibility for regulation of  
 10 the aeronautics and maritime transport --  
 11 maritime for safety issues. Derived from that  
 12 is the federal government's responsibility for  
 13 search and rescue. I previously mentioned on  
 14 the international agreements through ICAO and  
 15 IMO and the International Convention of Safety  
 16 of Life at Sea, Canada is signatory to  
 17 conventions, and those conventions, as I  
 18 previously mentioned, give us responsibilities  
 19 and obligations to provide search and rescue  
 20 services outside of our domestic borders. We  
 21 also participate in international  
 22 organizations, one of which is NATO, North  
 23 Atlantic Treaty Organization, where we work on  
 24 a standardization committee and that committee  
 25 really defines standards that are

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1 international in nature. So the same  
 2 terminology, same frequencies, and the like,  
 3 and we're active participants in those kinds  
 4 of conventions, and on the Coast Guard side,  
 5 they also operate in the standardization  
 6 committees. We have a MOU between Canada and  
 7 the United States, a Memo of Understanding.  
 8 So we conduct search -- it's sort of a  
 9 borderless regime where we can operate in  
 10 American waters, they can operate in Canadian  
 11 waters, through an agreement, and this is all  
 12 coordinated at a Rescue Coordinating Centre.  
 13 So there's a number of layers where we have  
 14 international obligations, where we have  
 15 responsibilities. Of course, as I mentioned  
 16 for the Coast Guard and the Canadian Forces,  
 17 our mandate is derived from the Government of  
 18 Canada, the Defence, Coast Guard, Fisheries,  
 19 those responsibilities.  
 20 MS. FAGAN:  
 21 Q. So in our map or chart here, for example, we  
 22 have a -- Greenland is shown up north, and  
 23 there's a pink line. I take it, you know,  
 24 that line is not actually drawn through the  
 25 middle of the ocean, you figure this out by

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1 looking at your coordinates on your navigation  
 2 equipment. Who is responsible for the other  
 3 side of the line, and I take it what you're  
 4 saying is these international agreements  
 5 stipulate and lay out who's going to do what  
 6 and how you're going to communicate? So who  
 7 would be on the other side and how would you  
 8 deal with that country?  
 9 COLONEL DROVER:  
 10 A. Yeah, and again, that speaks to our  
 11 arrangements that we have, both bilaterally  
 12 and multinationally laterally. In this  
 13 instance, it's Denmark who has responsibility  
 14 of the chunk on the other side of that purple  
 15 line. For a mariner or indeed an aviator  
 16 that's in trouble, you're right, the line is  
 17 not what counts. It's where they are and  
 18 where the rescue comes from. That is where  
 19 the coordination kicks in and takes place. So  
 20 this may well be -- and there is a rescue  
 21 coordinating centre in Greenland and there's  
 22 one in Trenton, and they would share  
 23 information, decide who is running the case,  
 24 decide where the assets are launched from, and  
 25 this is all part of the international SAR

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1 network, if you will. It's very impressive  
 2 when you consider it. So the whole globe  
 3 basically, it's sort of allotted in this  
 4 manner, the various responsibilities in a  
 5 region. It doesn't mean that we stop at the  
 6 border, but it means that there is a  
 7 responsibility division and we share through  
 8 communications with our neighbours how to  
 9 prosecute cases. Does that answer your  
 10 question?  
 11 MS. FAGAN:  
 12 Q. That answers the question. I take it on the  
 13 west coast, it would be the United States?  
 14 COLONEL DROVER:  
 15 A. Correct. Okay, if I may refer, just as a  
 16 comment at this juncture, in 1992, the Auditor  
 17 General produced a report after a study of our  
 18 Search and Rescue on a Federal level, and one  
 19 quote I think is worth mentioning, and that's  
 20 the timeliness of the response, which usually  
 21 depends on the proximity of rescue resources  
 22 to the incidents, is a critical factor in  
 23 saving people in distress. "Our review noted  
 24 that even in areas where Federal search and  
 25 rescue resources were available, other

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1 resources often performed rescue because they  
 2 were closer to the scene."  
 3 Earlier I mentioned that it's not an  
 4 exclusive domain of Coast Guard or indeed CF  
 5 to render the SAR response. We will certainly  
 6 respond to those incidents that are within our  
 7 jurisdiction and responsibility, but part of  
 8 the mission of the rescue coordinating centres  
 9 is to effect the quickest and the most  
 10 effective rescue and if there's a better  
 11 solution out there that may not be under the  
 12 Federal umbrella, they would consider that.  
 13 I'll have some more explanation on how that  
 14 works, but it speaks to there is other  
 15 partners and players in the system that  
 16 actually participate. So we'll get more into  
 17 that. So it's leveraging of resources that  
 18 are present in the region, vessels, aircraft,  
 19 resources. Indeed, in the last instance and  
 20 the first instance, it is the CF and Coast  
 21 Guard that will render assistance and we are  
 22 structured to do so.  
 23 So basically, what we have at the Federal  
 24 level, we have our response coordination and I  
 25 mentioned the three regions. Each of those

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1 regions has a rescue coordinating centre and  
 2 there are two maritime rescue subcentres, one  
 3 in Quebec and one here in St. John's, and I'll  
 4 have a little bit more on that. Canadian  
 5 Mission Control Centre, and that's our  
 6 satellite communications organization tracking  
 7 for beacons, and then onto our units. We have  
 8 the dedicated search and rescue units, both  
 9 air and on the Coast Guard. We have voluntary  
 10 organizations and we have commercial assets  
 11 available as well.  
 12 MS. FAGAN:  
 13 Q. Just one moment. For the group, on occasion  
 14 the Blackberrys will throw the static, so  
 15 those that don't absolutely need to be  
 16 monitoring it, it would be helpful if you  
 17 could turn them off. Okay, thank you. That's  
 18 what's causing the feedback and the static  
 19 over the mikes.  
 20 COLONEL DROVER:  
 21 A. Okay. Mentioned the three regions, that we  
 22 have it broken up, and we identify the regions  
 23 by the city where our coordinating centre is  
 24 based. So we have Victoria, Halifax and  
 25 Trenton, and it shows where the subcentres are

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1 then, St. John's and Quebec City.  
 2 So the role of the joint rescue  
 3 coordination centre is to coordinate the  
 4 overall response to federal aeronautical and  
 5 marine incidents. It's a 24/7 centre,  
 6 operating in all three of them. So speaking  
 7 of one, but all three are manned pretty well  
 8 the same. The OIC, officer in charge, is a  
 9 Major, a military, and he has a number of air  
 10 coordinators and system coordinators, all  
 11 military. On the Coast Guard side, they have  
 12 a regional supervisor of marine SAR, or SMS,  
 13 and they have marine coordinators and system  
 14 coordinators as well.  
 15 Each of the centres are designed a little  
 16 differently, but functionally, they're the  
 17 same, and I have noted on this particular  
 18 slide a website and that one is JRCCHALIFAX.  
 19 It's a simple site. It's linked to a number -  
 20 - well, it's linked to the other rescue  
 21 coordinating centres. It's linked to some of  
 22 the squadrons, to the Federal SAR page. So  
 23 for any interest to getting information I  
 24 don't provide here, that's a really web  
 25 source.

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1 MS. FAGAN:  
 2 Q. In the photograph itself, what centre is  
 3 depicted in this photograph and what do the  
 4 centres -- is there any difference in how the  
 5 centres look?  
 6 COLONEL DROVER:  
 7 A. Not -- there is, yeah. The layout is  
 8 different and for those sleuths in the  
 9 organization, in the audience here, could  
 10 probably look at the map, say that's Vancouver  
 11 Island, this could be Victoria, and indeed it  
 12 is.  
 13 MS. FAGAN:  
 14 Q. Well, it actually says it in the fine print  
 15 under the -  
 16 COLONEL DROVER:  
 17 A. Is it? Okay.  
 18 MS. FAGAN:  
 19 Q. - under the photograph.  
 20 COLONEL DROVER:  
 21 A. I understand.  
 22 MS. FAGAN:  
 23 Q. But we did ask, in all fairness, I did ask the  
 24 Colonel to put the website in for Halifax. I  
 25 wouldn't want to think that the picture got

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1 swapped. The picture is still Victoria, but  
 2 the website is for Halifax.  
 3 COLONEL DROVER:  
 4 A. Right.  
 5 MS. FAGAN:  
 6 Q. And in this photograph, we see charts and maps  
 7 on the wall and computers. How does this  
 8 photo, you know, compare to the other centres?  
 9 Do they all have maps and charts? How are  
 10 they -- how's the room physically laid out?  
 11 COLONEL DROVER:  
 12 A. Yeah, pretty much the same in that regard.  
 13 It's interesting, we discussed this offline  
 14 about having that big map on the wall.  
 15 There's nothing like a quick look at what's  
 16 happening in your region and this is the way  
 17 business used to be done exclusively. What  
 18 you'll find on the map, for instance, is  
 19 you'll have the placement of all the primary  
 20 SAR assets, both the Coast Guard, the ones  
 21 that the military has, probably a placement of  
 22 where your secondary assets might be, and some  
 23 other sort of important features. On the map  
 24 you'll see in the RCC in Halifax, we'll have  
 25 all the oil rigs locations and communications

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1 number. They have more elaborate information  
 2 on each of those rigs, for instance, but it's  
 3 all put on the map, and if there's any  
 4 particular activity of note, they will just  
 5 sort of grease pen it on there, and that's  
 6 okay for a quick look, but essentially, all  
 7 that information is now computer based and  
 8 there are interactive screens. They're into  
 9 databases. We have vessel plots, so we can  
 10 sort of establish in a particular area what  
 11 vessels are operating in the area, what  
 12 communication frequencies they're operating  
 13 on. So, and this is all interactive. So I  
 14 can share this information, not only from the  
 15 workstations in the centre, but between  
 16 centres. So Halifax and St. John's can have  
 17 the same sort of, I call it -- in the Air  
 18 Force, we used to call it a common operating  
 19 picture, but it is a common picture of all --  
 20 and the software allows you to do deselections  
 21 of various types. So if you want to get rid  
 22 of all the merchant vessels, you can blot out  
 23 that. So it's way more sophisticated than  
 24 having that wall plot, but the wall plot  
 25 remains a staple, I guess, in any coordinating

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1 centre.  
 2 Also in the centre, and I speak to it a  
 3 little bit here in the next slide, I believe,  
 4 we have a number of communication devices. So  
 5 we need to be able to broadcast, communicate  
 6 and receive broadcast and communications from  
 7 vessels and aircraft and shore stations and  
 8 it's very, very well connected, both satellite  
 9 and terrestrial and HF, high frequency, in  
 10 those capabilities.  
 11 MS. FAGAN:  
 12 Q. So you just mentioned the St. John's Centre.  
 13 As I understand it, there's the overarching  
 14 centre which is the Joint Rescue Coordination  
 15 Centre in Halifax which has air and marine  
 16 coordinators and specialists at those desks  
 17 that we see here depicted at this slide, and  
 18 in addition to that, there's a subcentre, a  
 19 marine centre in St. John's. Is that correct?  
 20 COLONEL DROVER:  
 21 A. That's correct, and I have a chart on that in  
 22 a couple of slides down, but they are a subset  
 23 of Halifax, subordinate to, but -- and it's  
 24 run totally by the Coast Guard folks, and they  
 25 are, as it turned out, they are connected or

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1 adjacent to the Marine Communication and  
 2 Traffic Services. So all the marine  
 3 broadcasting capability is collocated with the  
 4 subcentre. So any traffic, both on emergency  
 5 frequency or commercial frequency, is all  
 6 monitored in the same centre. So they're very  
 7 well communicated, connected.  
 8 MS. FAGAN:  
 9 Q. And so the information that's on the screens  
 10 in Halifax as to where all the vessels are  
 11 located, whether they're fishing vessels or  
 12 merchant tankers, is also available and on the  
 13 screens in the marine centre in St. John's?  
 14 They both can access all the same data?  
 15 COLONEL DROVER:  
 16 A. Absolutely. Absolutely, yeah.  
 17 MS. FAGAN:  
 18 Q. I believe you're now going to go through the  
 19 personnel and who is actually at these desks  
 20 and their -  
 21 COLONEL DROVER:  
 22 A. I shall.  
 23 MS. FAGAN:  
 24 Q. - their duties and their training, their  
 25 qualifications. So if you could take us

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1 through the personnel that are in the centres?  
 2 COLONEL DROVER:  
 3 A. Okay, I can. In the rescue coordinating  
 4 centres, we have an officer in charge, which I  
 5 mentioned, and the qualifications for that  
 6 position is a Canadian Forces SAR pilot or  
 7 navigator and they have to complete a search  
 8 masters course unit on-job-training. In all  
 9 these positions, once you do the qualification  
 10 courses and the prerequisite training and  
 11 experience background, there is a, what we  
 12 call on-job-training, which essentially a  
 13 check out, which is in most organizations that  
 14 makes sense, so that you don't go in charge  
 15 until you've had sufficient experience in a  
 16 particular centre, and that's what we mean  
 17 there, and there are other courses that they  
 18 do too, maritime rescue subcentre courses and  
 19 a controllers courses. And he is responsible  
 20 for the commander, the regional commander for  
 21 the effective and efficient management of the  
 22 JRCC and these commanders sort of, they get --  
 23 they're fairly involved. They don't live in  
 24 the centres, but they're connected to the  
 25 organization. So this commander reports

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1 fairly frequently to this superiors and gets  
 2 guidance accordingly, and in a typical  
 3 structure, he has a deputy who has essentially  
 4 the same background and qualifications,  
 5 usually a more junior individual, but a SAR  
 6 experienced individual.  
 7 Then we come to the Coast Guard side, and  
 8 they have the RSMS individual and he's the  
 9 senior Coast Guard officer assigned to JRCC  
 10 and he's responsible for the effectiveness of  
 11 the maritime SAR system within that area of  
 12 responsibility. Oft times it's not -- an  
 13 incident won't be the exclusive responsibility  
 14 for the Coast Guard or the military  
 15 individual. They share a lot of the --  
 16 especially in a more complex system or SAR,  
 17 they know each other's sort of requirements  
 18 and they can lend assistance. So the centre,  
 19 I guess, the manning of the centre works as a  
 20 team in every respect.  
 21 MS. FAGAN:  
 22 Q. So are these -- is the commander and then the  
 23 deputy and the regional, are they physically  
 24 in the centre themselves or are they somewhere  
 25 else?

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1 COLONEL DROVER:  
 2 A. These are all centre folks.  
 3 MS. FAGAN:  
 4 Q. So they're physically -- you know, they may  
 5 not be working 24/7, but they come in and  
 6 they're physically in the office?  
 7 COLONEL DROVER:  
 8 A. Absolutely. I mean, there is a rotation  
 9 obviously and it's manned minimally. You'll  
 10 find in most centres, three Air Force and  
 11 three Coast Guard at any given time. There'll  
 12 be more folks during the daytime because  
 13 you'll have the supervisor, and they, from  
 14 time to time, will sit a shift, if you will to  
 15 do normal duties. So they have all the  
 16 abilities and skills that the rest of the  
 17 centre folks have.  
 18 MS. FAGAN:  
 19 Q. What level of experience -- I mean, you note  
 20 that the qualification is to be a SAR pilot,  
 21 but generally speaking, what level of  
 22 experience would the commander and the  
 23 supervisory roles comprise? What type of  
 24 individual would be there?  
 25 COLONEL DROVER:

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1 A. As I mentioned, they, both on the marine side,  
 2 come from a SAR background. So the marine  
 3 individual would probably have worked on  
 4 offshore SAR primary vessels and been in some  
 5 command structure. On the air side, our  
 6 controllers, by and large, have multiple  
 7 search flying tours in a SAR squadron, maybe a  
 8 staff job in my headquarters. That's a  
 9 possibility. So they are sort of specialists  
 10 in SAR, both on the Coast Guard and the CF.  
 11 MS. FAGAN:  
 12 Q. They physically conducted the SAR missions and  
 13 put their time in in the trenches prior to  
 14 taking the position at the desk?  
 15 COLONEL DROVER:  
 16 A. Most, if not all of folks you'll find in the  
 17 RCC have had operational -- it's what we call  
 18 operational, what you describe as actually  
 19 doing SAR in some manner.  
 20 MS. FAGAN:  
 21 Q. And then we get down to the coordinators  
 22 themselves. So what type of individuals are  
 23 the coordinators?  
 24 COLONEL DROVER:  
 25 A. Yeah, again, as I mentioned, they do come from

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1 SAR backgrounds and they get the unit checkout  
 2 and they get familiar with the centre and how  
 3 it works, and what we do is we don't sort of  
 4 qualify these individuals, even though they  
 5 have a SAR background and now they're familiar  
 6 with the centre. Like most organizations, we  
 7 have a requirement to do a checkout scenario.  
 8 So to give them their qualification  
 9 certification, we have a scenario kind of  
 10 program where they have to demonstrate that  
 11 they can deal with certain complex search  
 12 activity. We have an annual written exam that  
 13 refreshes on their skills and abilities. We  
 14 also have, on the military side, a central  
 15 operational staff that do visits and they do -  
 16 - it's a mixture of a checkout, I guess, and  
 17 audit. So they go through the centre and  
 18 ensure that the centre is complying with all  
 19 their responsibilities, rules, regulations.  
 20 So in other words, they don't have adopted  
 21 local practices which is not in accordance  
 22 with proper procedures. So there's some  
 23 oversight continuing in the centres.  
 24 MS. FAGAN:  
 25 Q. So once you get your job -

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1 COLONEL DROVER:  
 2 A. You got to hang onto it.  
 3 MS. FAGAN:  
 4 Q. - it's not stagnant. You're going to be  
 5 audited and inspected?  
 6 COLONEL DROVER:  
 7 A. Indeed, absolutely, yeah.  
 8 MS. FAGAN:  
 9 Q. Now you had mentioned the communication, since  
 10 this is probably the vital role and function  
 11 is to communicate all the assets. What do you  
 12 use?  
 13 COLONEL DROVER:  
 14 A. Yeah. It is, I think, a key enabler to allow  
 15 the RCC centres to function at the high level  
 16 they do. Obviously to coordinate any incident  
 17 response is the collection of information of  
 18 the incident itself, and being able to  
 19 dispatch the right SAR response and coordinate  
 20 with that response and facilitate as well  
 21 enablers, if you will, a successful operation.  
 22 So, and later in my presentation, I walk  
 23 through a little scenario which, while those  
 24 SAR forces, be it maritime marine or aviation,  
 25 are on route to a scene, the centre RCC are

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1 enabling by getting weather updates, finding  
 2 where they should refuel, setting up medical  
 3 reception at various delivery points. So in  
 4 other words, when a helicopter arrives back in  
 5 St. John's with a passenger, it's no surprise  
 6 to the medical services. They are organized  
 7 and on station to pick the -- to do the  
 8 transfer. This is all done in the  
 9 coordination centres and obviously it's done  
 10 through phone, fax, e-mails. So we have a  
 11 variety of sort of networks, if you will.  
 12 Radio broadcasts on high frequencies and the  
 13 line of sight frequencies, and then the Coast  
 14 Guard has a number of communication networks  
 15 which you plug into. The Defence has a  
 16 network as well. So they have all these sort  
 17 of connectivities. They are not lacking in  
 18 terms of how and the ease with which they can  
 19 communicate with any agency they need to  
 20 communicate with, and that is -- I think it's  
 21 important because without that, they would be  
 22 hampered in being able to execute successful  
 23 coordination.  
 24 MS. FAGAN:  
 25 Q. Now I had asked you if there was any type of

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1 record management system or any management  
 2 system. Beyond doing this job, how do you  
 3 keep track of what you're doing and how do you  
 4 manage the information?  
 5 COLONEL DROVER:  
 6 A. Okay.  
 7 MS. FAGAN:  
 8 Q. And I think you prepared this slide in  
 9 response to that request.  
 10 COLONEL DROVER:  
 11 A. You asked the question because you got my  
 12 slides. No. One way or the other.  
 13 MS. FAGAN:  
 14 Q. We'll have to decide.  
 15 COLONEL DROVER:  
 16 A. Yeah.  
 17 MS. FAGAN:  
 18 Q. Cart before the horse.  
 19 COLONEL DROVER:  
 20 A. But I can speak to this. What you're  
 21 referring to is the rescue mission management  
 22 system. Earlier when I described we have the  
 23 charts, but we have this computer-based  
 24 interactive multi-screen display, but the sort  
 25 of brains, if you will, of this is this system

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1 that I've shown on the screen here and it  
 2 basically allows controllers or coordinators  
 3 to go to databases. So if I've got a vessel  
 4 of interest, for instance, that I need some  
 5 information on, this system allows any  
 6 workstation to be able to call up that vessel,  
 7 find out the tonnage, find out the crewing and  
 8 where it might be and that's another program.  
 9 So it gives you all those displays and  
 10 information and a call-up basis, mapping  
 11 resources, so I can blow up a particular area  
 12 and decide, "okay, how many airports in this  
 13 particular area can I operate my helicopter  
 14 out of?" and this is all part of the search  
 15 planning. I have all the satellite-based  
 16 information through this system so I can --  
 17 any alert, I can reach into a database and get  
 18 the position or the owner of the particular  
 19 beacon that goes off, and it also has ability  
 20 to archive. So it'll sort of log and park,  
 21 and it's also a forum that allows us to, in an  
 22 active case, add to activities, to record  
 23 action. So it's a fairly good system and  
 24 we've had it and we're very pleased with its  
 25 capabilities, I guess.

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1 Just a final word on our maritime rescue  
 2 subcentres, which you asked a little bit  
 3 earlier, and the role is to augment the  
 4 coordination of maritime response to Federal  
 5 marine incidents and regions of greater  
 6 activities, St. Lawrence Seaway, eastern  
 7 approaches, as I mentioned, Quebec City and  
 8 St. John's, and is a subordinate to the parent  
 9 JRCC responsible for SAR. So they basically,  
 10 on a day-to-day basis, work incidents off the  
 11 east coast and if required -- if an incident  
 12 required a larger response or more attention,  
 13 it's usually sort of managed by Halifax. It  
 14 would go to the adult -- to the parent centre,  
 15 but not always. So they do a lot of the  
 16 activity in this region that would and could  
 17 be done by Halifax, but in this case, it's  
 18 just a division and having them closer to the  
 19 action, so to speak. There's a premium as  
 20 well for the regional aspect of a control  
 21 centre. So there's -- because they're in the  
 22 region, they know more of the resources. They  
 23 get more familiar with the capabilities  
 24 resident in the region. So it's a very  
 25 effective layer to our response capability,

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1 and they are 24 and 7 as well.  
 2 COMMISSIONER:  
 3 Q. Before we leave communications, Colonel, you  
 4 were saying that your system tracks all  
 5 vessels and aircraft offshore. Is that --  
 6 that is so, is it?  
 7 COLONEL DROVER:  
 8 A. In terms of your system, I would sort of  
 9 qualify that, sir, a little bit by saying that  
 10 the Coast Guard has access to databases where  
 11 certain classes of vessels have to report  
 12 positions, and this is automatic update we  
 13 have. We, in the rescue coordinating centre,  
 14 have access to all that information through  
 15 our Coast Guard partners, absolutely.  
 16 COMMISSIONER:  
 17 Q. I see.  
 18 COLONEL DROVER:  
 19 A. And there's also a requirement for large  
 20 vessels, 96 hours before entering Canadian  
 21 waters, to report positions and that's  
 22 tracked. All that information is available.  
 23 COMMISSIONER:  
 24 Q. But my, I suppose, immediate question is if a  
 25 helicopter bound for the oil platforms leaves

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1 St. John's, does someone notify you or do you  
 2 check databases? How do you know that  
 3 aircraft is on its way?  
 4 COLONEL DROVER:  
 5 A. For the air picture, it's a little different,  
 6 and I didn't speak to that actually.  
 7 COMMISSIONER:  
 8 Q. Oh, okay.  
 9 COLONEL DROVER:  
 10 A. But I can. Normally we do not track air  
 11 movements, but NAV Canada, which is the agency  
 12 through Transport Canada that actually does  
 13 the air traffic controlling, they know where  
 14 aircraft are, the ones at least operating in a  
 15 flight plan, and normal air traffic is not of  
 16 interest to the rescue coordinating centre. A  
 17 little later in my presentation, I'll discuss  
 18 how, in an emergency, these aircraft will get  
 19 word to the RCCs that they're in peril.  
 20 COMMISSIONER:  
 21 Q. I see, okay.  
 22 COLONEL DROVER:  
 23 A. As an example, in the Cougar incident, our  
 24 first notification in the rescue coordinating  
 25 centre was from NAV Canada. The pilots in



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1 that aircraft reported their problem to NAV  
 2 Canada, because that's their operating  
 3 frequency, and the procedure is NAV Canada  
 4 will automatically inform the rescue  
 5 coordinating centre.  
 6 COMMISSIONER:  
 7 Q. I see, okay.  
 8 COLONEL DROVER:  
 9 A. But we don't have -  
 10 COMMISSIONER:  
 11 Q. You don't track them as such?  
 12 COLONEL DROVER:  
 13 A. No, I think you've had testimony where the  
 14 company, Cougar, actually has a tracking  
 15 system where they track their own aircraft.  
 16 COMMISSIONER:  
 17 Q. We haven't heard from Cougar yet, but I do  
 18 know -  
 19 COLONEL DROVER:  
 20 A. Well, it was referred to, I understand.  
 21 COMMISSIONER:  
 22 Q. - Cougar is able to do that.  
 23 COLONEL DROVER:  
 24 A. But we don't have that information at the  
 25 centre, at our centres. But companies, a lot

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1 of companies actually -- and the systems are  
 2 becoming more sophisticated, so there's a lot  
 3 more satellite based monitoring of traffic,  
 4 both surface traffic and as well as in the  
 5 air, but the important, I guess, aspect is  
 6 when one of these vessels or aircraft get in  
 7 trouble, it's how quickly my centres get  
 8 notified, because that starts the whole  
 9 process obviously.  
 10 COMMISSIONER:  
 11 Q. Yes, I see, okay. Thank you.  
 12 MS. FAGAN:  
 13 Q. So you don't -- we heard this system that  
 14 Cougar Helicopter has, it was referred to as  
 15 Blue Sky by the operators. Cougar hasn't  
 16 actually spoken about it, but the operators  
 17 did say that they have this tracking system,  
 18 and I think what you're saying is you don't  
 19 monitor -  
 20 COLONEL DROVER:  
 21 A. No.  
 22 MS. FAGAN:  
 23 Q. - those positions as they go, nor do you  
 24 monitor Air Canada or Westjet or Porter, any  
 25 of the other airlines?

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1 COLONEL DROVER:  
 2 A. Exactly. There's a lot of traffic out there.  
 3 We don't, but NAV Canada does, and we talk to  
 4 NAV Canada, so we get the information.  
 5 MS. FAGAN:  
 6 Q. With the vessels, for example, I understand  
 7 that not only do the larger vessels have to  
 8 report when they come in, larger -- some  
 9 larger vessels have to have monitoring systems  
 10 and the Canadian fishing vessels -  
 11 COLONEL DROVER:  
 12 A. Yes.  
 13 MS. FAGAN:  
 14 Q. - which are operating under Canadian fishing  
 15 licenses, all have a vessel monitoring system.  
 16 That information is relayed to the Department  
 17 of Fisheries and Oceans, which of course is  
 18 the overarching department for the Coast  
 19 Guard. So when you say you have access, are  
 20 you monitoring where all these fishing vessels  
 21 are or is it a situation where you can go into  
 22 the database and see where they are?  
 23 COLONEL DROVER:  
 24 A. It's more the latter. If you saw a dot plot  
 25 of the vessels that are at sea in any given

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1 time, it's quite impressive. There's a lot  
 2 out there, and there would be no reason that  
 3 we'd have somebody sort of "what's this guy  
 4 doing? What's that" -- that's not the role of  
 5 the RCCs. It is a responsibility of Coast  
 6 Guard. But what is important, which is the  
 7 latter part of your question, is that when I  
 8 need to know. First of all, if I have an area  
 9 of interest that I -- let's assume that I get  
 10 an EPIRB, which I'll talk about a little  
 11 later, getting a little bit ahead of our  
 12 definitions, but an electronic beacon, but  
 13 it's not sourced, but I know the area, so if I  
 14 blow up that area, I can interface with the  
 15 Coast Guard database to find out how many of  
 16 these fishing vessels might be located in that  
 17 area. I can communicate with any or all of  
 18 those vessels. I can broadcast on emergency  
 19 frequencies. Ask them do they -- have they  
 20 detected anything. So that the database is  
 21 available and it's a call up. So when I call  
 22 up that database, I don't have to -- it's in  
 23 the system, the mission management system that  
 24 I described. So all I have to do is click on  
 25 any icon, any little dot, and they will give

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1 that vessel's description. It's a crab  
 2 fisherman and it's operating in this  
 3 particular area.  
 4 MS. FAGAN:  
 5 Q. And then your database goes further to say how  
 6 big the vessel is?  
 7 COLONEL DROVER:  
 8 A. Oh yeah, yeah.  
 9 MS. FAGAN:  
 10 Q. And how many crew?  
 11 COLONEL DROVER:  
 12 A. Yeah, absolutely.  
 13 MS. FAGAN:  
 14 Q. And power and speed and all those.  
 15 COLONEL DROVER:  
 16 A. So we don't monitor as a part of our -- but we  
 17 have access which becomes important when we  
 18 need to know who in that particular area is  
 19 available or who would be out there.  
 20 MS. FAGAN:  
 21 Q. And this would be part of that leveraging  
 22 resources?  
 23 COLONEL DROVER:  
 24 A. Absolutely, absolutely, and the other part of  
 25 that, of course, is on the Coast Guard side,

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1 with their responsibility for monitoring, some  
 2 of these automatic reporting requirements, if  
 3 that's not met, that triggers a uncertainty  
 4 phase, which will alert the RCC that there may  
 5 be somebody -- because any vessel that doesn't  
 6 report a communications report that they have  
 7 hourly or two hour and these ones, the vessel  
 8 tracking system is automated, automatic. But  
 9 if it stops reporting, it triggers the system  
 10 to put in an alert and there's certain time  
 11 waits and then that information comes to RCC  
 12 and then that's how we establish an  
 13 uncertainty there might be a SAR case. So  
 14 it's -- that's sort of what takes place on a  
 15 daily basis actually.  
 16 MS. FAGAN:  
 17 Q. And with NAV Can, if this was a helicopter, as  
 18 I understand it, when the pilots or the  
 19 dispatchers file a flight plan, they file that  
 20 with NAV Canada to say, you know, where  
 21 they're going, and I understand that part of  
 22 that process in a flight plan is to indicate  
 23 in the flight plan the ETA is 10:00. If I do  
 24 not arrive or communicate back by 10:30,  
 25 that's that timing, then issue or initiate a

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1 notice. There's a notice procedure. But  
 2 that's part, as I understand it, of the NAV  
 3 Can process. It's not just the vessels who  
 4 have a time for a distress after their ETA.  
 5 The aircraft have a similar type procedure.  
 6 Is that fair or am I misstating it?  
 7 COLONEL DROVER:  
 8 A. No, that's absolutely correct, and there are  
 9 certain sort of degrees, I suppose. Again,  
 10 back to the air picture. If they are on a  
 11 instrument flight plan in domestic air space,  
 12 that requires this aircraft to be positively  
 13 monitored by air traffic services. So any  
 14 time that it fails to perform in the route  
 15 that it was assigned, that triggers that there  
 16 may be a problem and that will trigger a  
 17 communications check. If it's flying to a  
 18 remote destination where they have an ETA, as  
 19 you said, time of arrival, there is a time  
 20 limit, if it doesn't arrive, that absolutely  
 21 kicks in the SAR sort of response that that  
 22 aircraft didn't arrive. They are -- pilots  
 23 are required to close flight plans. So when  
 24 they arrive, they report that they are  
 25 successfully arrived. In an airport where the

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1 destination of that aircraft happens to be, so  
 2 if you're flying from here to Gander and  
 3 Gander had you with air traffic services and  
 4 you didn't arrive, that triggers it  
 5 automatically. So it doesn't have to be a  
 6 half an hour after. It depends on the  
 7 circumstance, but it's the same -- that's how  
 8 it works and information gets to RCC. A  
 9 little later in the presentation, I'll explain  
 10 what that means, like what does RCC do when  
 11 they get that information, but essentially,  
 12 that's how they fly.  
 13 When some of our SAR response incidents  
 14 occur when you have remote operators operating  
 15 in remote areas without doing proper  
 16 notification, and in those instances, it may  
 17 go a long time before it's actually reported  
 18 as an overdue. So those are the most  
 19 challenging because now we depend on -- if it  
 20 happens to be a crash, we depend on a beacon  
 21 to signal our satellite response and if that  
 22 fails, it's -- a lot of times, it's somebody,  
 23 sort of concerned citizen saying "we haven't  
 24 contacted this individual." So there are many  
 25 levels, I guess, in the air picture, and to

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1 some extent in the maritime environment,  
 2 because not all ships are plotted and  
 3 monitored. I mean, you can take your sailing  
 4 vessel out and you're not obliged to report.  
 5 MS. FAGAN:  
 6 Q. And perhaps when -- later on you have a time,  
 7 a sequence, a sequencing chart, and then  
 8 perhaps as a couple of examples how some of  
 9 these reporting and these time delays can  
 10 affect the rescue effort.  
 11 COLONEL DROVER:  
 12 A. Yeah.  
 13 MS. FAGAN:  
 14 Q. And since we're at the break and before we  
 15 move into the next section, which is your  
 16 control centre, perhaps if we could take the  
 17 break and then move on back to the PowerPoint.  
 18 COLONEL DROVER:  
 19 A. Okay.  
 20 MS. FAGAN:  
 21 Q. Thank you.  
 22 COMMISSIONER:  
 23 Q. Okay.  
 24 (BREAK)  
 25 MS. FAGAN:

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1 Q. Colonel Drover, just before the break, you  
 2 were about to move into slide 32, which -- you  
 3 were on slide 32, the maritime rescue. I  
 4 don't know if you have anything else to say  
 5 about that centre or if you want to move into  
 6 the next centre?  
 7 COLONEL DROVER:  
 8 A. We can move on to the next centre, if that -  
 9 MS. FAGAN:  
 10 Q. That would be great, thank you.  
 11 COLONEL DROVER:  
 12 A. Okay. All right. I'd now like to switch to  
 13 another centre that is part of our SAR  
 14 response network, the Canadian Mission Control  
 15 Centre, CMCC. The role of this centre is to  
 16 receive, analyze and distribute distress  
 17 beacon alert information obtained from  
 18 COSPAS/SARSAT system. Distress beacons, ELTs,  
 19 EPIRBs, PLBs transmitting on 406 frequency.  
 20 I'll explain those various beacons in a  
 21 moment. This centre as well is manned 24  
 22 hours a day, seven days a week. This centre  
 23 is manned primarily by Canadian Forces  
 24 personnel. We have two civilian positions  
 25 that monitor databases or maintain databases.

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1 And a major is in charge of this centre as  
 2 well. Again, the individuals working here  
 3 have SAR experience and background. We also  
 4 maintain the beacon registry for the 406  
 5 beacon.  
 6 MS. FAGAN:  
 7 Q. Can you just explain what the beacon registry  
 8 is?  
 9 COLONEL DROVER:  
 10 A. Perhaps I'll describe the next chart, the  
 11 beacons, and then I'll answer that question.  
 12 MS. FAGAN:  
 13 Q. Okay.  
 14 COLONEL DROVER:  
 15 A. And remind me if I don't get back, but I  
 16 should be able to address that.  
 17 MS. FAGAN:  
 18 Q. No problem.  
 19 COLONEL DROVER:  
 20 A. So we're talking distress beacons. There are  
 21 three types out there that we deal with, and  
 22 the first one is the personal locator beacon,  
 23 and it's normally manually activated and it  
 24 can transmit on several frequencies. 121.5  
 25 and 406 are the two primary ones that we would

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1 have operating on those frequencies.  
 2 ELT, which is aircraft ELTs or aircraft-  
 3 based emergency beacons, and they can be  
 4 activated manually or automatically, fixed or  
 5 general type of apparatus. Again, they  
 6 operate on three frequencies, 121.5, the 423  
 7 and the 406.  
 8 And the EPIRB, which is a marine  
 9 variance, the emergency position indicating  
 10 radio beacon, and it can be activated manually  
 11 or float-activated switch as well, operating  
 12 on 121 and 406.  
 13 So these beacons communicate with the  
 14 satellite-based system and the technology now  
 15 allows these beacons to send an encoded  
 16 message, which we receive in the Mission  
 17 Control Centre, and we go to a database and in  
 18 that database, that will record the  
 19 information where this beacon originates, in  
 20 terms of what it's attached to, the aircraft  
 21 or a vessel, and it has a number of bits of  
 22 information that's pertinent to resolving a  
 23 SAR case, and those would include the owner,  
 24 the type, the number of passengers possible,  
 25 and the contact points. So it allows us a

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1 very almost real time start point, if you  
 2 will, when one of these beacons are received,  
 3 to be able to start to discover whether or not  
 4 an individual or an organization or a ship is  
 5 actually in distress.  
 6 Go to the next chart and you may recall  
 7 seeing this graphic during our video this  
 8 morning, and I'll just spend a little time  
 9 talking to it, which will bring into focus  
 10 what I just described in terms of beacons.  
 11 So we're talking a space based system  
 12 that detects any beacon that may be  
 13 transmitting emergency beacon, and I mentioned  
 14 the three types that we may -- which would be  
 15 marine based, shore-based, which is ELT  
 16 aircraft, and the personal locator beacon, and  
 17 once they send a transmission, there's an  
 18 array of satellites, both geostationary and  
 19 polar orbiting, that will detect the signal  
 20 and it will download the signal to local user  
 21 terminals which a lot of countries have these  
 22 stations, we have a series of them, and this  
 23 collects data, sends it to the Mission Control  
 24 Centre. The Mission Control Centre is located  
 25 in Trenton. It's adjacent to our rescue

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1 coordinating centre. Once the information is  
 2 received in this centre, again, the  
 3 controllers at this centre will go to the  
 4 database and find out some information. They  
 5 take, of course, the emergency information and  
 6 automatically pass that off to the rescue  
 7 coordinating centres and the rescue  
 8 coordinating centres can then start comparing  
 9 that information which would give them a  
 10 distress location, with other information they  
 11 may have had. They may have had a report from  
 12 air traffic services saying they had a mayday  
 13 report, an overdue. So this is part of the  
 14 information collected at the JRCC, which will  
 15 form a SAR case in most cases, and then we  
 16 respond accordingly with SAR assets.  
 17 The one sort of change from the original  
 18 sort of fielding of the COSPAS/SARSAT, it no  
 19 longer operates at 121. It only detects 406  
 20 beacon signals. So it's -  
 21 MS. FAGAN:  
 22 Q. What does COSPAS/SARSAT mean?  
 23 COLONEL DROVER:  
 24 A. What does it mean?  
 25 MS. FAGAN:

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1 Q. It's one of the longest acronyms, I think,  
 2 we've seen so far.  
 3 COLONEL DROVER:  
 4 A. Actually, I didn't give you the history of  
 5 COSPAS/SARSAT, but I can take a couple of  
 6 minutes and explain the genesis of that  
 7 system. Actually, it was a cooperative  
 8 arrangement with four countries initially  
 9 involved, Russia, Canada, the US and France.  
 10 Russia had its own system of space spaced  
 11 detection of beacons and they called it the  
 12 COSPAS. In North America, we created, and  
 13 with French help, I suppose, a similar system  
 14 and we call it the search and rescue satellite  
 15 tracking system. So we took two acronyms,  
 16 because the system actually uses the Russian  
 17 component satellites and US-developed  
 18 satellite components, with components from  
 19 France and Canada. So we put it together and  
 20 its now known as COSPAS/SARSAT.  
 21 MS. FAGAN:  
 22 Q. And is that when the 406 frequency came in or  
 23 was it 121 and then moved to 406?  
 24 COLONEL DROVER:  
 25 A. Originally, it was 121 and the 406 or the 243,

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1 which is a military application, so it's  
 2 principally for commercial operators 121, and  
 3 during -- after the initial development, the  
 4 406 was designated an emergency frequency and  
 5 it was incorporated into the current satellite  
 6 array, because satellites have to be replaced  
 7 from time to time, so it -- as we put new  
 8 satellites in orbit, we did the conversion to  
 9 the 406.  
 10 MS. FAGAN:  
 11 Q. So is 406 the world global frequency or is 406  
 12 just a North American frequency?  
 13 COLONEL DROVER:  
 14 A. It is worldwide, accepted distress frequency  
 15 used worldwide and actually this COSPAS/SARSAT  
 16 system it's fielded worldwide as well, just  
 17 because the four nations that have provided  
 18 its components, any country that's signatory  
 19 that has a local user station will use it in  
 20 the same manner as we use it.  
 21 MS. FAGAN:  
 22 Q. The registry system, if you didn't have a  
 23 registry system, what I take it is that  
 24 there's now a system that if people have these  
 25 beacons or transmitting devices, they would

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1 register with this system so that if their  
 2 device went off, presumably has a number or  
 3 some type of identifier, then you could, you  
 4 know, match that to the data that belonged to  
 5 that device. If you didn't have a registry  
 6 system and didn't have a database which would  
 7 tell you what device belonged to what type of  
 8 aircraft or vessel, and presumably there was  
 9 no registry system at some time, what would  
 10 the circumstance be? What would the situation  
 11 be?  
 12 COLONEL DROVER:  
 13 A. It's a good question. Originally when we  
 14 field out the satellite system using the 121,  
 15 it didn't have the encoded capability to  
 16 identify the owner of that beacon. So there  
 17 was no database, no database requirement.  
 18 Notwithstanding that, what this system does  
 19 do, and maybe I didn't explain it fully, is  
 20 that it gives a position where this beacon is  
 21 signalling from. That position, with or  
 22 without the registry, we get with the 406 as  
 23 well. The advantage to the registry is we can  
 24 determine, in addition to the location, some  
 25 more information that we're -- so we know what

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1 type of aircraft it would be.  
 2 The second thing, it allows us to make  
 3 contact with the owner to see, in actual fact,  
 4 if this is an inadvertent activation, because  
 5 we've had false alarms. In the old system  
 6 121, there's absolutely no way to tell if it's  
 7 a false alarm. You launch a SAR asset to go  
 8 and you'll find this beacon has probably been  
 9 activated during a maintenance in somebody's  
 10 hangar. This registration program allows us  
 11 to contact the owners. It's -- I mean, it's  
 12 just one more sort of advantage to the system,  
 13 but at the end of the day, there's enough  
 14 information from satellite detection with this  
 15 system to alert the SAR that there's a  
 16 distress or a possible distress and we would  
 17 take appropriate action.  
 18 MS. FAGAN:  
 19 Q. If you can't reach the owner, do you still  
 20 launch the SAR?  
 21 COLONEL DROVER:  
 22 A. Absolutely. Absolutely. The beacon distress  
 23 call, if you will, activates the SAR system  
 24 and that starts a whole series of activities  
 25 at the RCC to get as much information as they

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1 can, but they start with a location.  
 2 MS. FAGAN:  
 3 Q. If you could reach the owner, say it's a  
 4 vessel, how does being able to contact the  
 5 owner and find out what the circumstances are,  
 6 if it is -- say it's a real distress, how does  
 7 that impact how you prepare or gear up or how  
 8 does knowing what type of aircraft you're  
 9 looking for affect the team when it's gearing  
 10 up to conduct its mission?  
 11 COLONEL DROVER:  
 12 A. The more information you can gather and the  
 13 quicker you can gather it, the better you're  
 14 prepared to field the appropriate response.  
 15 Later on in my presentation, I will talk about  
 16 some of the considerations given before we  
 17 launch a particular aircraft or asset. You'll  
 18 also find, from my presentation, that most of  
 19 our SAR forces are already sort of pre-  
 20 prepared on the ground, if you will, to deal  
 21 with an array of possible incidents. So it's  
 22 not like we have to do a serious  
 23 reconfiguration. But information is an  
 24 important factor and the more information that  
 25 we can get, the better we can prepare, in

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1 terms of how many people might be involved.  
 2 If we know the type of aircraft, that is  
 3 helpful, lacking any other sort of confirmed  
 4 information that we may get from air traffic  
 5 from NAV Canada and that sort of thing.  
 6 MS. FAGAN:  
 7 Q. Okay. On the beacons, and in particular the  
 8 PLBs.  
 9 COLONEL DROVER:  
 10 A. PLBs.  
 11 MS. FAGAN:  
 12 Q. The personal beacons, we did have information  
 13 before us on the suits that are worn, the  
 14 survival suits that are worn by the workers  
 15 travelling offshore, and in the exhibits put  
 16 forward by Helly Hansen, they had a photograph  
 17 of the suit and it showed a strobe light and  
 18 it also shows a marshall type beacon, and as I  
 19 understand it, the workers travelling offshore  
 20 Newfoundland and Labrador have the automatic -  
 21 - it's an automatic deployed activated homing  
 22 type device and the one that's used in Nova  
 23 Scotia is a manual activation, but it's a  
 24 satellite signal. Now you, in your slide,  
 25 showed the devices that are satellite. You

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1 mention one was manually activated and I take  
 2 it you're familiar with these types of devices  
 3 and could you just explain the beacon with the  
 4 satellite, you've just described it, that's  
 5 the one with the 406 and the signal gives --  
 6 goes to the satellite. What about the beacon  
 7 or, you know, the personal locator beacon  
 8 that's not a satellite type device, it's more  
 9 of a homing device. Can you explain the  
 10 difference and how they assist in a rescue  
 11 effort?  
 12 COLONEL DROVER:  
 13 A. Yes, I can. There are two different elements  
 14 at play. For the satellite based beacon,  
 15 distress beacon, it will provide a location,  
 16 depending on whether it's not GBS connected,  
 17 it'll give us a position which will be within  
 18 kilometres, five kilometres or less of the  
 19 actual position. The current way to home  
 20 these beacons is with the addition of a 121  
 21 signal that's accompanying the ELT and EPIRB  
 22 406. In other words, we get the position from  
 23 the satellite, but to home the beacon, we use  
 24 a small sort of side frequency of 121, which  
 25 is also transmitting from those distress

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1 beacons. That allows us to actually home in  
 2 on the object in the water or on the land.  
 3 A homing device, in the form of a PLB,  
 4 gives us that same ability, transmitting on  
 5 121. If a PLB is transmitting on 406, it will  
 6 give us a location, but that location will be  
 7 small but a general area, as opposed to a  
 8 precise area. So we have the location and the  
 9 other aspect is the homing capability which we  
 10 get from 121.  
 11 So in theory, the better, if you had two  
 12 choices, would be to have a personal locator  
 13 beacon that, if you had a choice, it would be  
 14 probably with a homer, if you're in a  
 15 situation where the incident would be sort of  
 16 easily found. So in other words, if it's an  
 17 area, a man overboard where you know the  
 18 position of the ship, then that homing  
 19 application makes the search sort of  
 20 effective, as opposed to having a satellite  
 21 giving a general location of where that  
 22 position is. Is that -  
 23 MS. FAGAN:  
 24 Q. Yeah, that's what I'm looking for.  
 25 COLONEL DROVER:

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1 A. Okay.  
 2 MS. FAGAN:  
 3 Q. Because what we had, and I could be wrong, but  
 4 the evidence, as I understand it, was that the  
 5 beacon that's worn by the workers travelling  
 6 offshore Newfoundland has the homing type  
 7 feature. It is not the type of beacon that  
 8 gives a satellite feed, and basically what I  
 9 understand is that the Blue Sky system keeps  
 10 track of where the helicopter is. So it is  
 11 known, for the most part, with a fair bit of  
 12 precision where the helicopter is, and what  
 13 I'm hearing is that if you have the general  
 14 location, if you know within two or three or  
 15 even four kilometres the location of the  
 16 accident, then the homing feature is better  
 17 because that will bring you precisely to the  
 18 passenger. Would that be a fair statement?  
 19 COLONEL DROVER:  
 20 A. That is correct.  
 21 MS. FAGAN:  
 22 Q. Now the second feature of these devices is  
 23 one, the one being worn by the Newfoundland  
 24 and Labrador workforce, are automatically  
 25 activated once they make contact with

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1 saltwater. The other device, which has the  
 2 satellite type feature, requires manual  
 3 activation. Now you've run these SAR missions  
 4 and you've seen how people react. So in your  
 5 view, have you seen the manual versus the  
 6 automatic type features, and would you comment  
 7 on which one is more effective?  
 8 COLONEL DROVER:  
 9 A. Actually, from a SAR response perspective, any  
 10 automatic activation is superior to the one  
 11 that requires a manipulation by individual,  
 12 simply because incapacitation or any other  
 13 cause that would prevent that manual  
 14 activation, then there's no signal and there's  
 15 no assistance for the SAR service. So an  
 16 automatic activation will almost certainly  
 17 guarantee that you'll have that activation  
 18 when it's needed.  
 19 MS. FAGAN:  
 20 Q. Thank you. I'll have you move on now through.  
 21 COLONEL DROVER:  
 22 A. Okay.  
 23 MS. FAGAN:  
 24 Q. I think your next slide is homing.  
 25 COLONEL DROVER:

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1 A. It is, and -  
 2 MS. FAGAN:  
 3 Q. I don't know if we've covered it all.  
 4 COLONEL DROVER:  
 5 A. We did, and I think the note on this  
 6 particular chart, I just put this in to make  
 7 the note that we actually have the capability  
 8 for our aircraft to be able to home the  
 9 devices that Cougar aircraft have, the ELTs  
 10 that they carry, the 406, as well as their  
 11 immersion suits for their crew and passengers.  
 12 MS. FAGAN:  
 13 Q. So the ELT, that is the satellite type based  
 14 device?  
 15 COLONEL DROVER:  
 16 A. Correct.  
 17 MS. FAGAN:  
 18 Q. And the passengers, that's the homing type  
 19 device?  
 20 COLONEL DROVER:  
 21 A. Correct. Correct, and we have the capacity --  
 22 because as I previously mentioned, Cougar  
 23 operating their ELTs at the 406, also  
 24 transmits on the 121, which allows us to home,  
 25 as they all do.

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1 MS. FAGAN:  
 2 Q. Okay. I believe this is a slide on locations.  
 3 COLONEL DROVER:  
 4 A. Correct. Continue?  
 5 MS. FAGAN:  
 6 Q. Well, this slide 37, as I understand it, shows  
 7 the locations of a number of squadrons and can  
 8 you please explain where the assets are, what  
 9 assets are at these locations? I mean, what  
 10 do these locations represent when it comes to  
 11 SAR?  
 12 COLONEL DROVER:  
 13 A. I can indeed. Again, we go back to our three  
 14 rescue regions, and each of those regions have  
 15 dedicated search and rescue squadrons and  
 16 several of them also have secondary units that  
 17 have SAR capability. So on the west coast, we  
 18 have one squadron located at Comox, and in the  
 19 central, we have a dedicated squadron in  
 20 Winnipeg, with a secondary unit in Cold Lake.  
 21 Trenton is served by a squadron that's based  
 22 in Trenton as well, with secondary in  
 23 Bagotville, and on the east coast, we actually  
 24 have two dedicated squadrons, one in Greenwood  
 25 and one at Gander, and a supplementary or a

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1 reserve squadron, a secondary squadron in  
 2 Goose Bay.  
 3 MS. FAGAN:  
 4 Q. You have primary and secondary and then  
 5 voluntary resources. So you're going to give  
 6 us all the resources and where they all are?  
 7 Is that correct?  
 8 COLONEL DROVER:  
 9 A. Yes, ma'am.  
 10 MS. FAGAN:  
 11 Q. Okay.  
 12 COLONEL DROVER:  
 13 A. I'll do that next.  
 14 MS. FAGAN:  
 15 Q. Yes, please.  
 16 COLONEL DROVER:  
 17 A. And again, just show you the map where these  
 18 units are located, and I'll just speak briefly  
 19 about the disposition, the posture, if you  
 20 will, of where our aircraft are, and two in  
 21 particular, I'll elaborate a little bit more  
 22 on the capabilities of those particular  
 23 platforms, because they're most at play as  
 24 applies to the east coast.  
 25 Starting on the west coast, we have the

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1 Buffalo aircraft, which is a fixed wing SAR  
 2 aircraft, and the Cormorant, the main sort of  
 3 helicopter in our SAR fleet, and I'll speak to  
 4 that one specifically. I will point out, for  
 5 all of these, you'll see numbers of aircraft  
 6 at the base. If you notice, on the bottom of  
 7 the screen, a comment, "one of each type of  
 8 aircraft per base location dedicated to SAR  
 9 response 24 and 7." That is our level of  
 10 service. That means that there will be a SAR  
 11 airplane on standby of each of these types  
 12 listed. The number that happen to be on base  
 13 are not always and all on standby. They're  
 14 all SAR aircraft, but they support the  
 15 maintenance of one aircraft always being  
 16 available, and some of them have other roles.  
 17 You go to Trenton, for instance, and you see  
 18 11 Hercules. Not all of those are in the SAR  
 19 flow, but any one of those, if required, could  
 20 be used for that purpose, so the various  
 21 numbers on that side. And that refers to one  
 22 of the earlier presentations where it had some  
 23 units listed with fewer SAR resources than  
 24 others. That's not exactly correct. It's  
 25 more applicable that each of these squadrons

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1 has a dedicated aircraft on status, if you  
 2 will.  
 3 MS. FAGAN:  
 4 Q. And if needed, and does it happen where some  
 5 of the these aircraft may be moved or used by  
 6 other bases and how does that work?  
 7 COLONEL DROVER:  
 8 A. We certainly maintain this posture and to do  
 9 that, there may be occasions where we may  
 10 temporarily assign one of the west coast  
 11 helicopters to the east coast, or more likely,  
 12 between the two east coast helicopter units,  
 13 we may move one aircraft from one unit to  
 14 another. So they're not fixed permanently.  
 15 Easier with a Hercules, we can draw from  
 16 Trenton to backfill, if there's a requirement  
 17 in Winnipeg, say for instance. So yes, they  
 18 are certainly mobile in that extent.  
 19 MS. FAGAN:  
 20 Q. Okay.  
 21 COLONEL DROVER:  
 22 A. So just down the chart, we look from Comox, we  
 23 get to Winnipeg, Manitoba, and we have our  
 24 Hercules as the main SAR platform. Trenton  
 25 has a Griffon helicopter and actually this

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1 picture here is depicted as a army or tactical  
 2 aviation, at least colour. It is actually in  
 3 the SAR colour scheme. The Hercules are not,  
 4 but the Buffalo and the helicopters, including  
 5 the Griffon, have the yellow SAR paint scheme.  
 6 And on the east coast, we got the  
 7 Cormorant and the Hercules out of Greenwood,  
 8 and of course, we're familiar with the Gander  
 9 operation with the Cormorant.  
 10 I mentioned our secondary squadrons, and  
 11 we have three combat support squadrons and  
 12 they operate with Griffons, and these aircraft  
 13 actually are SAR configured as well. We have  
 14 SAR Techs, which I'll talk about momentarily,  
 15 assigned to those squadrons. The difference  
 16 is their primary role is not search and  
 17 rescue. Their primary role is support  
 18 military flying operations and exercises.  
 19 They are, because they are SAR capable,  
 20 available, but just not on 24 and 7 status.  
 21 So they can be employed when available.  
 22 On the west coast and east coast, we have  
 23 our Sea King aircraft and it has a secondary  
 24 role for search and rescue. It has hoist  
 25 capabilities. It's a fairly large cabin and

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1 it's obviously over water aircraft by  
 2 function. So it is a secondary resource, and  
 3 we've used the Sea King often in SAR  
 4 operations.  
 5 Also, at Comox and Greenwood, we have the  
 6 Aurora aircraft, and this is aircraft by  
 7 virtue of its speed, range, endurance, has a  
 8 capability to provide the first on scene in  
 9 some incidents and work as a command or  
 10 communications platform, sometimes a command  
 11 and control platform. It has the capability  
 12 to deploy what we call a Sea SKAD, which is a  
 13 deployable package that delivers life rafts  
 14 and various survival for a marine incident.  
 15 So it actually has some capability to deliver  
 16 rescue materials to the site.  
 17 MS. FAGAN:  
 18 Q. On this as well, there's -- just on the  
 19 bottom, it says "and any CF aircraft or Navy  
 20 vessel as appropriate." Could you elaborate  
 21 on how you would access other aircraft or Navy  
 22 vessels?  
 23 COLONEL DROVER:  
 24 A. It's fairly straightforward. The two RCCs on  
 25 the coast, or in the Maritime area, they're

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1 command centres, and the commanders of those  
 2 two regions are actually the fleet commanders  
 3 east coast and west coast. So it's a fairly  
 4 straightforward matter of going through a  
 5 requesting process where actually the RCC  
 6 coordinators can go right to the command  
 7 centres for the Maritime organization and  
 8 request additional assets. If there's a ship,  
 9 for instance, at sea, they can easily be  
 10 engaged. They have ready ships that can be  
 11 prepared for sailing within hours and those  
 12 could be employed through this requesting  
 13 process. For any other aircraft, military  
 14 aircraft, it's merely a case of determining  
 15 what's in the area, which as I previously  
 16 described as capabilities that they have RCC  
 17 to make contact with the various assets and  
 18 resources and work through an appropriate  
 19 command structure, but easily to engage those  
 20 types of aircraft as well. So those are the  
 21 activities that are at the JRCCs in  
 22 determining what the best, the quickest, the  
 23 fastest, the most effective SAR response,  
 24 those are considerations, absolutely.  
 25 MS. FAGAN:



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1 Q. And would it be fair to say that the JRCC  
 2 knows where the Navy vessels are and where  
 3 some of these other assets, in addition to  
 4 knowing where they commercial assets such as  
 5 the fishing vessels, would they also be  
 6 informed -  
 7 COLONEL DROVER:  
 8 A. They have the -  
 9 MS. FAGAN:  
 10 Q. - as to where all these assets are?  
 11 COLONEL DROVER:  
 12 A. They have the resources very quickly at hand  
 13 to find out. They don't track them, as again  
 14 same as the vessels, as part of their normal  
 15 duties. They have a system in place to be  
 16 able to tap into those databases or command  
 17 centres to find out for sure and that's again  
 18 part of the work of the staff at JRCC to  
 19 continually update those procedures and  
 20 routines, so that they don't have to search  
 21 when they're needed.  
 22 MS. FAGAN:  
 23 Q. Okay, thank you.  
 24 COLONEL DROVER:  
 25 A. Just a word on our volunteer organization. We

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1 have, for a number of years, engaged the  
 2 community to assist in our responsibilities  
 3 for the SAR response and we have an  
 4 organization called CASARA, Civil Air Search  
 5 and Rescue Association, and they provide  
 6 aircraft and crews, search communications  
 7 functions during SAR operations. They cannot  
 8 be tasked -- so they're not part of any  
 9 military asset that we can call forward, but  
 10 we employ them quite often and we have  
 11 arrangements to compensate, of course, for  
 12 their expenses, and once -- they are part of  
 13 the team in every manner, so if they're  
 14 capable of assisting, they're available, then  
 15 we employ them, and they don't have the  
 16 capacity to drop things from their aircraft,  
 17 but they serve more in a capacity of --  
 18 especially over land searches where the more  
 19 assets you can employ, you can divide up.  
 20 Because sometimes the search area is over  
 21 land. It's pretty extensive, pretty extensive  
 22 real estate to have to search, so they are a  
 23 force multiplier and they assist greatly.  
 24 The other thing they provide is trained  
 25 spotters and spotters for again search

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1 operations, not so much in the maritime  
 2 environment, although it does take place, but  
 3 for land searches, we have to fly over tracts  
 4 of land looking for any evidence of a crash  
 5 site, for instance. Searching is a required  
 6 capability, I guess, an acquired capability.  
 7 We have to train for it because there are ways  
 8 to do it effectively, and it's also fatiguing.  
 9 So you can't sort of continually search for  
 10 long periods of time without losing your  
 11 effectiveness. We, in our search aircraft,  
 12 will employ members of the CASARA organization  
 13 to join the crew as spotters and they actually  
 14 help the crew maximize the effectiveness for a  
 15 particular SAR search pattern.  
 16 MS. FAGAN:  
 17 Q. So are they taken on board the aircraft or are  
 18 they -  
 19 COLONEL DROVER:  
 20 A. Yeah. They fly with us as part of the crew  
 21 and we also have a training program that we  
 22 sponsor and that allows them to fly with us on  
 23 a routine basis, practice and training. The  
 24 other thing that the reserves actually do, and  
 25 I go back to my previous slide about

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1 prevention, where a lot of our CASARA members  
 2 are actually community leaders. They're  
 3 leaders in flying clubs. They're part of  
 4 flying sort of fun events. They're respected  
 5 and they are part of our education. So they  
 6 preach, teach, safe flying practices. They  
 7 have a network of contacts, just keeping  
 8 flight plan information, ensuring that their  
 9 members of their flying clubs and associations  
 10 understand the importance of those aspects.  
 11 So it's really a great contribution to our  
 12 whole national SAR program.  
 13 And I won't go into it, but on the marine  
 14 side, the Coast Guard Auxiliary -  
 15 MS. FAGAN:  
 16 Q. I was just going to ask you that.  
 17 COLONEL DROVER:  
 18 A. All right, okay.  
 19 MS. FAGAN:  
 20 Q. And I said I didn't mention Coast Guard  
 21 before, and I didn't want to throw you, but is  
 22 this where the Coast Guard Auxiliary would fit  
 23 in?  
 24 COLONEL DROVER:  
 25 A. They have a very similar program, working with

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1 the Coast Guard big brothers and they train  
 2 together and they participate in search  
 3 operations and a lot of those are also  
 4 commercial operators, vessel, fishermen. So  
 5 they're very, very familiar with the group  
 6 that they are associated with. Also we train  
 7 with the Auxiliary, the Coast Guard Auxiliary,  
 8 on a routine basis. I believe we had an  
 9 aircraft here yesterday that was probably  
 10 working with a Coast Guard Auxiliary vessel.  
 11 So the training is very important to allow  
 12 that interface working with aircraft. So it's  
 13 an ongoing program and it's a very, very  
 14 effective one as well.

15 MS. FAGAN:  
 16 Q. So this would be part of leveraging the  
 17 resources and you just don't leverage them,  
 18 you are also helping to train and educate them  
 19 so that when you do need to call upon them,  
 20 they're more effective?

21 COLONEL DROVER:  
 22 A. Absolutely, yes.

23 MS. FAGAN:  
 24 Q. Now you went through a list of various  
 25 aircraft and what we're most interested in is

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1 the Hercules and the Cormorant because I  
 2 understand they are the two that may be used  
 3 most often in the east coast water type search  
 4 and rescue. So could you go through the  
 5 capabilities of each of those aircraft? And  
 6 then I have a few other questions.

7 COLONEL DROVER:  
 8 A. Okay. Yeah, pleased to do that, and you're  
 9 correct, the -- if you look back at the slide  
 10 with the primary bases for the east coast,  
 11 it's the Hercules and the Cormorant that are  
 12 employed out of Greenwood and Gander for  
 13 helicopter, and again, each of these aircraft  
 14 bring sort of unique capabilities that enable  
 15 us to do search response effectively.  
 16 Start with the Herc. It's a fixed wing  
 17 platform, but it offers range, speed and  
 18 capacity. So what the aircraft actually  
 19 enables us to do is get to the scene of the  
 20 incident more quickly, generally speaking,  
 21 than a helicopter. So getting to locate, go  
 22 to -- if it's a distress beacon that causes  
 23 the alert or if there's an overdue report,  
 24 which may require some searching activity, it  
 25 can get on scene and getting an aircraft on

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1 scene is important. Back to our discussion  
 2 about how you prepare and how you respond to  
 3 an incident, the more you know about that  
 4 incident, the better you're able to respond.  
 5 So the aircraft Hercules will be launched to  
 6 initially respond. The helicopter will be  
 7 responding the same time, but at a slower pace  
 8 obviously. So you expect a Hercules to arrive  
 9 on scene and give the initial reports.

10 The Hercules has a lot of capability to  
 11 provide some assistance to people in distress,  
 12 even before a helicopter gets there. For over  
 13 land applications, get to a incident site, SAR  
 14 techs would normally be deployed by parachute.  
 15 There's any number of types of rescue support  
 16 equipment that can be dropped, including  
 17 shelter, food, medical supplies. So we can  
 18 basically render assistance from a fixed wing  
 19 platform using aerial delivery. Over the  
 20 ocean, it's a similar situation where we can  
 21 actually drop our SAR techs in the water. We  
 22 can drop -- if a vessel were taking on water,  
 23 we have pumps that we can drop to the vessel  
 24 and we can drop life rafts to the vessel. We  
 25 can insert our SAR techs to render assistance.

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1 So a lot of rescue type functions take  
 2 place when we get a Hercules on scene, and I  
 3 mentioned some of the ones that show up in the  
 4 slide, the things that they carry. Toboggans  
 5 for winter operations, and that's a pack up of  
 6 clothing and the like for survival in harsh  
 7 conditions. Mentioned the sea kits. One  
 8 feature it has is flare illumination. So at a  
 9 fairly high altitude, it can deploy what we  
 10 call paraflares, which will illuminate an  
 11 extensive area on the surface for about four  
 12 minutes before it descends with its parachute  
 13 and they drop another one, and this actually  
 14 can light up an area to enable surface vessels  
 15 or helicopters to operate with better light  
 16 conditions. So sometimes it provides that.

17 Another capability that often comes into  
 18 play is its ability to -- once it gets to a  
 19 location, it can actually give vectors,  
 20 directions to low level helicopters that may  
 21 not have the navigation to take them to the  
 22 incident site. So it can actually home in or  
 23 vector those helicopters to the site of the  
 24 crash. It can also path find in terms of  
 25 giving a helicopter, that just departed with

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1 not updated information where the incident  
 2 site is, a more direct route to get to that  
 3 location.  
 4 Serving as a COM platform, it can again,  
 5 because of its COM suite aboard the aircraft,  
 6 can communicate with, in most cases, shore-  
 7 based stations like RCC, current updates so  
 8 there's a sharing of information. So if a  
 9 helicopter arrives on scene, the helicopter,  
 10 because it's flying low, may not be in  
 11 communication with all the agencies. The  
 12 Herc, in this instance, could relay the  
 13 pertinent information to the helicopter to  
 14 conduct the successful SAR operations. Also,  
 15 as a command and control, we call it on-scene  
 16 commander function, where in an area where you  
 17 have multiple search and rescue assets in a  
 18 small area, they provide the services as a  
 19 coordinator and controlling and assigning  
 20 various altitudes for safe execution of that  
 21 search area. So they control that particular  
 22 small location.  
 23 MS. FAGAN:  
 24 Q. So the term on-scene commander, let's say we  
 25 have two -- let's say we've got a civilian, a

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1 small civilian aircraft that's gone out as a  
 2 spotter and they're trying to assist where  
 3 they can, and then you may have a civilian  
 4 helicopter and you may have a DND helicopter.  
 5 Let's say you have three different pieces of  
 6 equipment all operating below the Herc. So  
 7 how does the on-scene commander -- could you  
 8 just explain that term, because that's the  
 9 first time, I think, we might have heard that  
 10 and what does he or she do with respect to all  
 11 these assets?  
 12 COLONEL DROVER:  
 13 A. Yeah. In a case like that, everybody will  
 14 report on a common frequency. So every asset  
 15 that's involved in the search operation is  
 16 working in the same frequency. The Herc will  
 17 identify its responsibility as the on-scene  
 18 coordinator. It will assign each of those  
 19 participants a responsibility area, sector,  
 20 altitude and give them instructions. So  
 21 they're in a controlled environment and they  
 22 can't participate outside of that environment.  
 23 So you can't have a media aircraft sort of  
 24 flying to get the 6:00 news report. They come  
 25 under restricted air space to the extent that

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1 it's controlled by this aircraft during the  
 2 time of the incident.  
 3 MS. FAGAN:  
 4 Q. Yeah, and so this is actually happening in the  
 5 Hercules aircraft, say, above the other three  
 6 aircraft. What is JRCC doing? Because  
 7 that's, you know, a group of coordinators at  
 8 radios and phones in Halifax.  
 9 COLONEL DROVER:  
 10 A. Right.  
 11 MS. FAGAN:  
 12 Q. So a lot of people, I think, may be under the  
 13 impression it's JRCC that's telling an  
 14 individual helicopter "stay at this altitude."  
 15 COLONEL DROVER:  
 16 A. Sometimes that's the case, if you have one or  
 17 two responders and they sort of work out their  
 18 mutual arrangements without any on-scene  
 19 commander. The JRCC is responsible for the  
 20 SAR incident. So they own the incident, so to  
 21 speak. If they have an on-scene commander in  
 22 the form of a Herc, that on-scene commander is  
 23 actually reporting to the JRCC. But what the  
 24 JRCC does not have, it doesn't have that local  
 25 situation. For instance, if the weather is

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1 really horrible, the on-scene commander may  
 2 recommend to JRCC to hold the next aircraft on  
 3 the ramp because there's no point in launching  
 4 them, those sorts of things, but essentially  
 5 that coordination takes place from the centre  
 6 to their airborne aircraft.  
 7 MS. FAGAN:  
 8 Q. And the airborne aircraft might control the  
 9 precise movements on the scene, but it's JRCC  
 10 that's -  
 11 COLONEL DROVER:  
 12 A. The larger -- absolutely, large picture, and  
 13 we can't forget the fact that if it's a marine  
 14 incident, there's a Coast Guard aspect. So  
 15 it's not only the aircraft in the sky who's  
 16 coordinating the coastal vessels, and again,  
 17 it's back at the RCC where they decide which  
 18 vessels are best suited to go in what sector  
 19 and that sort of thing. So yes, the  
 20 coordination remains at the JRCC. The on-  
 21 scene activities, and speaks mostly for the  
 22 airborne picture and how to make it a safe and  
 23 effective environment to operate from.  
 24 MS. FAGAN:  
 25 Q. Okay. So if there's a dispatcher at St.

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1 John's Airport and there's a piece of  
 2 equipment that's looking to fly out to the  
 3 scene, it wouldn't be the on-scene commander  
 4 in the Herc talking to the dispatcher. It  
 5 would be JRCC dealing with the dispatcher?  
 6 COLONEL DROVER:  
 7 A. That's correct, and if that airplane were  
 8 inbound to the search area, JRCC would inform  
 9 the on-scene commander that there is another  
 10 aircraft joining and give him the ETA,  
 11 estimate of time of arrival, and its call sign  
 12 and stuff like that. So when this individual  
 13 aircraft arrives, it reports in, on the same  
 14 frequency that everybody's working, to the  
 15 control.  
 16 MS. FAGAN:  
 17 Q. So once that aircraft that's inbound arrives  
 18 at the scene, that aircraft would report to  
 19 the on-scene commander?  
 20 COLONEL DROVER:  
 21 A. Correct.  
 22 MS. FAGAN:  
 23 Q. Who is the Hercules up above.  
 24 COLONEL DROVER:  
 25 A. And it doesn't have to be a Hercules.

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1 MS. FAGAN:  
 2 Q. It could be -  
 3 COLONEL DROVER:  
 4 A. We're talking a Hercules here, because that's  
 5 one of the functions that it does on a fairly  
 6 routine basis. One more thing that it does  
 7 do, we use it as what we call top cover. When  
 8 we have an extended mission, in other words we  
 9 send our helicopter out to the very extreme  
 10 edge of its range to fly out and back, the  
 11 tracking and navigation is an important factor  
 12 because they want to maximize their ability on  
 13 site, if you will, before they have to return  
 14 because of fuel. So we have our Hercules  
 15 working that same incident to assist the  
 16 helicopter in terms of direct flying and all  
 17 the other things that they may assist,  
 18 including flight planning and things like  
 19 that. So it may not get involved in a rescue  
 20 operation per se, but it may provide that top  
 21 cover for -- so a lot of times it's just more  
 22 than a single aircraft which would respond.  
 23 It would be with the Herc as well.  
 24 MS. FAGAN:  
 25 Q. Okay, thank you. Now the Cormorant itself,

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1 the helicopter, and I take it from what you're  
 2 saying is the officer in the helicopter could  
 3 be the on-scene commander if there wasn't a  
 4 Hercules or one of the other aircraft could be  
 5 the on-scene commander?  
 6 COLONEL DROVER:  
 7 A. That's correct.  
 8 MS. FAGAN:  
 9 Q. We've got the example, and I think we  
 10 understand how it works. So now can you go  
 11 through the features of the Cormorant  
 12 helicopters?  
 13 COLONEL DROVER:  
 14 A. I can. Again, we have what we consider a very  
 15 capable SAR platform. In terms of range and  
 16 speed, this is better than many aircraft,  
 17 helicopter aircrafts that are in operation,  
 18 not only in search and rescue, but in the  
 19 passenger field, and it's got a good capacity  
 20 cabin space which is important when we're  
 21 dealing with evacuees, medevacs, injured  
 22 individuals that require stretcher care or  
 23 medical care on route, and some of the  
 24 capacities we list there, it's the standard  
 25 SAR configuration. It'll take two stretchers

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1 and four seated. We can modify this to do 12  
 2 stretchers and we can get 18 Pax seated  
 3 comfortably. Clearly, the aircraft has  
 4 configuration flexibility. So we can sort of  
 5 make modifications as required to accommodate  
 6 fairly large numbers of casualties.  
 7 Some of the features that set it aside  
 8 from a passenger or commercial helicopter is  
 9 the hoist, and we have two independent hoists  
 10 in this aircraft. They're located in the same  
 11 -- collocated in the same sort of structure,  
 12 but they're two totally independent systems.  
 13 So one system failure would not impact on the  
 14 serviceability of the second system, and they  
 15 both have capacity of 600 pounds, which allows  
 16 a double hoist situation.  
 17 MS. FAGAN:  
 18 Q. On the hoist, are both hoists permanently in  
 19 place or is it one hoist is there and if that  
 20 hoist fails, you then have to attach the  
 21 second hoist?  
 22 COLONEL DROVER:  
 23 A. No, they're both permanent installation and  
 24 they're part of our standard configuration.  
 25 So there's no requirements to do any swap out

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1 or change.

2 MS. FAGAN:

3 Q. Okay.

4 COLONEL DROVER:

5 A. And the other features that this aircraft, as

6 a SAR platform, it's VFR and IFR. That refers

7 to clear skies and instrument conditions where

8 you have cloudy skies and the aircraft has a

9 good capability to fly in moderate icing

10 conditions, which again is not common to most

11 helicopters that operate these days. And we

12 carry some SAR equipment, of course, rescue

13 baskets, pumps, rafts for marine application.

14 So the SAR sort of load, if you will,

15 equipment load, there's a standard sort of

16 equipment that's always on the aircraft and we

17 have the flexibility of adding, as required,

18 to that before mission launch.

19 MS. FAGAN:

20 Q. Before you move into the next slide, do you

21 know the winds limits for starting a

22 Cormorant? We had heard in previous

23 presentations that in high wind conditions,

24 you can't start a helicopter, and, for

25 example, when the Cougar helicopter lands on

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1 the rig, I think the protocol is to continue

2 to run the helicopter so that they're not in a

3 situation of having to try and start the

4 helicopter cold while out on a Platform on the

5 helideck, and we did have evidence as to the

6 different types of civilian helicopters, what

7 the wind limits were. So if you could tell me

8 what the wind limits are for the Cormorant and

9 do you start this helicopter inside a hangar,

10 or do you start it outside, how do you deal

11 with wind?

12 COLONEL DROVER:

13 A. Right. The challenge, of course, in high wind

14 conditions with a helicopter is the rotor

15 engagement and the rotor disengagement, and as

16 it spools up with wind effect, it's whether or

17 not the action of the blades interfere with

18 the fuselage. So there are definite limits

19 and they differ depending on the type of

20 helicopter and rotor head we're talking about.

21 For this aircraft, again it has pretty

22 impressive operating capabilities, and I think

23 the figure, I'll have to confirm it, but I'm

24 fairly comfortable in saying that it's

25 approximately 55 knots for rotor engagement if

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1 we can orient the aircraft in the right wind

2 configuration. It will decrease down to

3 probably 35 if it's parked where we have a

4 tail wind, that sort of thing. All that to

5 say that in most wind conditions, obviously,

6 below that then there's no impact wind for

7 engagement of the rotor. At this time, we do

8 not have a procedure to start the aircraft in

9 a hangar. It's not beyond the realm of

10 possibility to start this particular aircraft

11 or any with a suitably prepared hangar. Our

12 inventory doesn't have that capability, but

13 the other aspect, of course, is if the winds

14 are that high, there are other challenges in

15 sort of flying in those conditions, but those

16 are the parameters that we're operating under

17 today.

18 MS. FAGAN:

19 Q. Thank you. I know there was some interest

20 expressed in the auto-hover capability of our

21 helicopter, and I thought I'd share with you

22 the rationale, if you will, why we think that

23 the auto-hover capability is an important

24 feature for our SAR helicopter. So when we

25 chose to purchase a new rescue helicopter, we

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1 started, of course, with mission analysis,

2 determining what types of SAR missions would

3 be in play, and this is the whole gamut of

4 what we'd be looking for and it speaks to

5 night, day, over land, over water, and

6 basically we needed a platform that was

7 capable of performing hoisting. So in other

8 words, they couldn't land, they'd have to

9 operate in a hover situation to hoist people

10 out of bush, terrain, arctic, or over the

11 oceans, and because of the nature of SAR, it's

12 totally random, this has to be accomplished

13 day and night, so it doesn't respect hours of

14 the day, and the very easy conclusion, I

15 suppose, was that an auto-hover feature

16 enables the crew to perform a rescue hoisting

17 operation at night, which without an auto-

18 hover becomes a very challenging and sometimes

19 impossible procedure to execute safely, and as

20 described on the slide here, if the pilots do

21 not have horizon reference, it's very

22 difficult to station keep -- keep the platform

23 stable without those references, and the auto-

24 hover allows that aircraft to maintain a

25 geographic point and then there's still some

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1 manual manipulation to maintain that position  
 2 over the person in the water or whatever  
 3 you're rescuing, but it is a very essential  
 4 feature that we think serves our -- makes our  
 5 SAR helicopter effective, no matter what the  
 6 conditions we're faced.  
 7 MS. FAGAN:  
 8 Q. Thank you. Now I think this is a great slide  
 9 because it's like a floor plan of the inside  
 10 of the Cormorant helicopter, and I'd ask you  
 11 to take us through some of these positions,  
 12 who is positioned where, what personnel, and  
 13 then I have a number of questions depending on  
 14 how --  
 15 COLONEL DROVER:  
 16 A. How complete my description is.  
 17 MS. FAGAN:  
 18 Q. How complete --  
 19 COLONEL DROVER:  
 20 A. Fair enough. Again I had mentioned earlier  
 21 there's some flexibility in terms of how we  
 22 configure the aircraft, but we do sort of  
 23 maintain a standard configuration for the  
 24 aircraft. We will have it parked ready for  
 25 immediate launch with a standard fuel load.

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1 So basically this thing is ready to be  
 2 employed very quickly if need be. Just  
 3 looking at the schematic, we operate with two  
 4 pilots, and all our SAR aircraft, as an  
 5 earlier slide referred to, that all our SAR  
 6 aircraft have two pilots. This one has a  
 7 flight engineer in the middle. Behind we have  
 8 several stations where we would have our SAR  
 9 techs or spotters. You'll see when you're half  
 10 way down the fuselage on your right, that  
 11 thing in front of the extended landing gear  
 12 area, is where our hoist operators -- operates  
 13 from, I should say. A number of storage boxes  
 14 along the fuselage there, and four stations  
 15 you'll see along the fuselage, little bump  
 16 outs, little half circles, those are depicting  
 17 our bubble windows and they're sort of located  
 18 where our spotters would sit, and what that  
 19 allows us to be able to do is it allows a  
 20 spotter to look outside of the flush fuselage,  
 21 so that he can have larger span of view and he  
 22 can actually see below the aircraft. So when  
 23 we're doing a search pattern, we don't lose  
 24 any space that's directly below the aircraft  
 25 because it's blocked out by a flat window

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1 where you can't project out there. So it's a  
 2 bubble window. It's kind of a unique feature,  
 3 I guess, of search platforms, and it aids in  
 4 search effectiveness.  
 5 MS. FAGAN:  
 6 Q. What about night vision goggles, do you use  
 7 night vision goggles and how do they assist in  
 8 searching?  
 9 COLONEL DROVER:  
 10 A. Night vision goggles has been a great  
 11 invention for the business of search and  
 12 rescue, and, yes, we do employ them. What  
 13 they allow us to do is obviously see better at  
 14 night, but more importantly, they allow us to  
 15 be able to conduct search operations when  
 16 without them it just wouldn't have enough  
 17 visibility to be able to do it safely. One  
 18 very, very key area of effectiveness is the  
 19 night vision goggles have a great capacity to  
 20 pick up a light source. You mentioned,  
 21 although we didn't talk about, the strobe  
 22 light where the immersion suit has a strobe  
 23 light. In the dark, otherwise, and the  
 24 illumination at night, with night vision  
 25 goggles, that's very, very distinctive. You

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1 may see it with the naked eye, but you'll  
 2 surely with night vision goggles be able to  
 3 focus on that and bring it in. So very much a  
 4 part of our SAR capability.  
 5 MS. FAGAN:  
 6 Q. The air crew, and I don't know if there's a  
 7 difference in what they wear, but we have two  
 8 pilots and then we have a number of  
 9 technicians. What type of flight suits,  
 10 survival suits, do they wear, and then I'll  
 11 ask you to go through some of the features of  
 12 what the SAR techs and the pilots use?  
 13 COLONEL DROVER:  
 14 A. For normal over water operations, they wear  
 15 the -- the crew will wear immersion suits, and  
 16 we have certain sort of requirements,  
 17 depending on wind and sea temperature, but  
 18 generally speaking in the North Atlantic,  
 19 they're in immersion suits. The SAR techs may  
 20 have -- if they're going to do a dive, will  
 21 have a wet suit as opposed to the dry suit  
 22 that the crew members. In addition to that,  
 23 the crew members operate with a life vest kind  
 24 of arrangement as well, so it's a combination  
 25 of -- I don't know the brand names of that

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1 stuff, but we do have immersion suits.  
 2 MS. FAGAN:  
 3 Q. So do the pilots wear immersion suits as well  
 4 as the -- are they all the same, except that  
 5 there's a dive.  
 6 COLONEL DROVER:  
 7 A. Yes.  
 8 MS. FAGAN:  
 9 Q. Then the techs would wear a wet suit.  
 10 COLONEL DROVER:  
 11 A. They can. Again depending on what the mission  
 12 is and how they're configured, they'll have  
 13 some kind of a survival suit that they're  
 14 wearing.  
 15 MS. FAGAN:  
 16 Q. Do they have strobe lights or beacons?  
 17 COLONEL DROVER:  
 18 A. The survival suits that are worn by the crew  
 19 don't have beacons, but they do have strobe  
 20 lights.  
 21 MS. FAGAN:  
 22 Q. And what about breathing apparatuses. We have  
 23 a fair bit of information here on a device  
 24 called a HUEBA, which is a Helicopter  
 25 Underwater Escape Breathing Apparatus. We also

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1 heard that some military use breathing  
 2 apparatuses. So do the pilots and the techs,  
 3 do they both have apparatuses, or nobody has  
 4 an apparatus?  
 5 COLONEL DROVER:  
 6 A. We outfit all our crew positions with an  
 7 emergency breathing system, and it's basically  
 8 a bottle of compressed air. It's readily  
 9 accessible regulator and mouthpiece and it  
 10 provides two to three minutes of breathable  
 11 air.  
 12 MS. FAGAN:  
 13 Q. Is that part of the suits that are worn by the  
 14 pilots and SAR techs, or is it a canister  
 15 that's available and accessible?  
 16 COLONEL DROVER:  
 17 A. It's attached to the equipment that they're  
 18 wearing.  
 19 MS. FAGAN:  
 20 Q. So it's attached to the suit. So the suit  
 21 that the pilot would wear or the pilots would  
 22 wear, would have a floatation device, it would  
 23 be some type of immersion suit, survival suit,  
 24 and it would have a strobe and it would have  
 25 compressed air?

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1 COLONEL DROVER:  
 2 A. Correct.  
 3 MS. FAGAN:  
 4 Q. But it would not have a homing locator type  
 5 beacon?  
 6 COLONEL DROVER:  
 7 A. Correct.  
 8 MS. FAGAN:  
 9 Q. Would the SAR techs need a hoist or winch if  
 10 they were going to complete a medevac from a  
 11 helideck? If you're landing, do you need the  
 12 hoist or winch?  
 13 COLONEL DROVER:  
 14 A. No, any time over the land or a deck that you  
 15 could land on, there's no requirement to  
 16 hoist. The SAR techs do the scene. If it's a  
 17 safe environment for the aircraft to land,  
 18 that is the best first choice and option. In  
 19 circumstances and situations where you can't  
 20 do that effectively or safety, requires the  
 21 hoisting of the SAR techs.  
 22 MS. FAGAN:  
 23 Q. Does the hoist or the winch which is  
 24 permanently configured, I take it that remains  
 25 there in position if you're landing?

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1 COLONEL DROVER:  
 2 A. Yes.  
 3 MS. FAGAN:  
 4 Q. You don't have to remove it to land. Does it  
 5 in any way impede the ability to land on a  
 6 helideck?  
 7 COLONEL DROVER:  
 8 A. No, it doesn't.  
 9 MS. FAGAN:  
 10 Q. That's all my questions on this slide.  
 11 COMMISSIONER:  
 12 Q. Before you leave that, I just have one or two  
 13 questions. I notice you have a flight  
 14 engineer. Now I think we all remember when  
 15 commercial jets had a flight engineer as well.  
 16 They gave them up. What safety connotation  
 17 does a flight engineer have in the Cormorant?  
 18 COLONEL DROVER:  
 19 A. Sir, they obviously -- in the cockpit, they  
 20 serve the traditional roles and  
 21 responsibilities that a flight engineer would,  
 22 monitoring systems, fuel flow, and things like  
 23 that. They actually in addition for the SAR  
 24 crew application are part of the crew that  
 25 would operate the hoist. So if I sent my two

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1 SAR techs down to a rescue suit, I've got two  
 2 pilots that actually fly the aircraft, the  
 3 flight engineer is no longer in the cockpit,  
 4 he's back operating the winch. So he becomes  
 5 -somebody has to do that, so we assign and  
 6 train our flight engineers to serve in that  
 7 capacity and it's a very effective use of crew  
 8 positions.  
 9 COMMISSIONER:  
 10 Q. So if you didn't have that person, one of the  
 11 SAR techs would have to operate the winch or  
 12 whatever?  
 13 COLONEL DROVER:  
 14 A. That's correct, which would -- in a lot of  
 15 circumstances, as a matter of fact, most  
 16 applications, depending if it's a crash site  
 17 that require medical treatment before  
 18 extraction, we -- our philosophy is to send  
 19 two SAR techs. In a lot of cases, for  
 20 instance, just taking an injured victim from a  
 21 crash site, to move that victim to a place  
 22 where you can actually execute a hoist  
 23 operation, you may have to manhandle, if you  
 24 will, so it takes two SAR techs. There's some  
 25 pretty sort of challenging things they do.

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1 When we do a water entry, again the buddy  
 2 system having two there, without the flight  
 3 engineer or another crew member, we could only  
 4 deploy one because you need a hoist operator.  
 5 COMMISSIONER:  
 6 Q. I see. One other question, not perhaps  
 7 directly -- well, it is directly related to  
 8 the aircraft. When an aircraft is on standby  
 9 or ready to go to the highest state of  
 10 readiness, is it fuelled? What I'm really  
 11 asking, there are no dangers, I take it, in  
 12 pre-fuelling the aircraft?  
 13 COLONEL DROVER:  
 14 A. No.  
 15 COMMISSIONER:  
 16 Q. Whether it's called up or not?  
 17 COLONEL DROVER:  
 18 A. No, the challenge sometimes, depending on  
 19 which aircraft we're talking about, is what  
 20 fuel load to put on the aircraft. So if you  
 21 want to take additional SAR rescue equipment,  
 22 you may need a smaller fuel load. If you want  
 23 maximum range, a higher fuel load. We have a  
 24 normal ramp fuel load that all our SAR  
 25 aircraft will have. So for all intents and

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1 purposes, this aircraft is ready to go flying  
 2 without any additional servicing. That allows  
 3 us to meet our minimum take off requirements.  
 4 A very quick addition to fuel can take place  
 5 while the crew are flight planning and  
 6 boarding the aircraft if required, but  
 7 normally speaking, the aircraft is primed  
 8 ready to go with a fuel load that will allow  
 9 him to do the SAR mission.  
 10 COMMISSIONER:  
 11 Q. And in the case of a heavy lift helicopter,  
 12 which these are, of course, from empty, how  
 13 long would it take to refuel such a helicopter  
 14 approximately?  
 15 COLONEL DROVER:  
 16 A. The turnaround time would be about 20 minutes,  
 17 I would suspect, but I am not technically  
 18 familiar with this particular aircraft. Allow  
 19 me, sir, if you would, to confirm that number,  
 20 but it's a fairly quick application.  
 21 COMMISSIONER:  
 22 Q. It's not three quarters of an hour or  
 23 something like that?  
 24 COLONEL DROVER:  
 25 A. It's not -- no, it wouldn't be that long.

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1 COMMISSIONER:  
 2 Q. Okay, thank you.  
 3 MS. FAGAN:  
 4 Q. Now can you take us through the components of  
 5 a SAR crew?  
 6 COLONEL DROVER:  
 7 A. Okay, again throughout the morning we've been  
 8 talking a little bit about search and rescue  
 9 technicians from our opening video, and we've  
 10 just had a discussion on some of the crew  
 11 positions in the aircraft. So a SAR team, and  
 12 we have SAR techs in the helicopters as well  
 13 as fixed wing aircraft. The SAR technicians,  
 14 as we alluded to, are basically those folks  
 15 that we deploy that would render medical  
 16 assistance, prepare individuals/casualties to  
 17 be extracted from the scene and recovered. So  
 18 they operate essentially away from the  
 19 aircraft. In some situations, though, we  
 20 don't deploy or SAR team. If we're still  
 21 looking in the search phase or while they're  
 22 aboard the aircraft, they serve obviously in a  
 23 SAR function, they do the spotting, looking at  
 24 the clearance, and they sort of assist the  
 25 crew, if you will, in the search phase. We



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1 had a little discussion and to speak to the  
 2 front end, the pilots, and I'll talk a little  
 3 bit more about how they -- we'll get to their  
 4 qualifications. So we have flight engineers,  
 5 navigators for the Hercules aircraft, and load  
 6 masters for the Hercules aircraft, and what a  
 7 load master does is basically because the  
 8 number of options, including large containers  
 9 that we can deploy from the aircraft, they  
 10 control those kind of activities. The crew  
 11 basically are responsible for -- the front end  
 12 crew at least, to enable the SAR techs, I  
 13 guess, to perform their duties. A few words  
 14 then on the air crew themselves. I mentioned  
 15 they're responsible for the safe and effective  
 16 operation of the aircraft, and the idea is to  
 17 again deliver -- albeit the best case is to be  
 18 able to land a helicopter and let them sort of  
 19 operate without having to be hoisted down, but  
 20 they have the capability of parachuting or  
 21 hoisting as well. So the pilots, basically I  
 22 mentioned there are two pilots on all our  
 23 aircraft, helicopter and fixed wing, the  
 24 flight engineer in the helicopters and the  
 25 fixed wing, one navigator on the Hercules and

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1 the load master. I have a graphic here to --  
 2 this is a normal sort of progression, if you  
 3 will, for our front end crew, the pilots. We  
 4 start sort of recruitment or transfer of  
 5 occupation. Essentially, the programs you may  
 6 be familiar with, Regular Officer Training  
 7 Plan, Military College, those sort of the  
 8 post-secondary education phase, and we sort of  
 9 start with a whole bucket of individuals.  
 10 There's air crew selection process for those  
 11 that wish to become air crew and those that  
 12 have the other sort of requisite  
 13 qualifications. Through a selection process,  
 14 they join the Flying Training Program and they  
 15 work through various phases until they get  
 16 their wings, and at the bottom piece we take  
 17 the individuals and employ them on an  
 18 operational squadron and starts at the top of  
 19 that funnel, so restricted FO, FO being First  
 20 Officer, that's co-pilot, and they work their  
 21 way through the system through operational  
 22 experience as a First Officer, training,  
 23 specialized courses, exams at some stage to  
 24 become an aircraft commander. So it's a --  
 25 that's the way all our flying operation

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1 progression really takes place. So  
 2 specifically for our Cormorant, as an example,  
 3 the initial officer training, one to four  
 4 years, and that's all academic, that's not in  
 5 the aircraft yet. The basic flying course  
 6 about a one year, and that takes us through  
 7 the various phases to the advanced phase, and  
 8 that's where we would call a wings graduation.  
 9 So it's the first time the individual can call  
 10 themselves a pilot, I guess. Operational  
 11 training goes for three to twelve months and  
 12 that's basically getting -- first of all, you  
 13 get checked out on the aircraft. So you learn  
 14 to fly the aircraft and then you learn to  
 15 mission. In this case, talking about what we  
 16 are today, after the conversion phase, if you  
 17 will, the learning how to fly the aircraft,  
 18 there's another phase of how to fly it in a  
 19 search and rescue role, and that will take you  
 20 through all the exercises of how to do the  
 21 hoisting and manoeuvre search and the like.  
 22 Eventually when the individual gets on  
 23 squadron, as I mentioned starts as a First  
 24 Officer, and that individual will progress  
 25 within two years normally to an aircraft

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1 commander.  
 2 MS. FAGAN:  
 3 Q. Before you move to the technicians, this is  
 4 how you become a pilot and an aircraft  
 5 commander. Once you've reached that level,  
 6 what if anything is done to ensure that the  
 7 SAR pilots remain competent?  
 8 COLONEL DROVER:  
 9 A. Right. There are a number of sequential  
 10 requirements that they fulfil. We have an  
 11 organization, a central organization of  
 12 training and standards -- standards  
 13 evaluation, I guess, is more what they are  
 14 referred to, and this team actually will go to  
 15 the unit and do standard check rides on  
 16 individuals and crews. So that's part of in  
 17 terms of making sure the squadrons maintain an  
 18 appropriate level of competency. On the  
 19 pilots, they do an instrument check ride each  
 20 year and that's all the instrument procedures  
 21 they have to apply. They do an annual  
 22 proficiency exam, a written test, and a flight  
 23 evaluation. It could be a day flight or a  
 24 night flight. From an aircraft commander's  
 25 point of view, there's a biannual SAR check

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1 ride and this is a very comprehensive crew  
 2 orientated mission, if you will, simulating an  
 3 actual SAR situation and that is checked by  
 4 either a senior squadron check pilot, or it  
 5 may be one of this standard eval team members.  
 6 The first officers actually each quarter do a  
 7 supervised flight by one of the senior  
 8 squadron check pilots.

9 MS. FAGAN:  
 10 Q. Do the pilots at DND, the Canadian Forces,  
 11 receive any simulator training, and if they  
 12 do, how often do they have simulator training?

13 COLONEL DROVER:  
 14 A. Right. The simulator is sort of a part of  
 15 maintaining competency and proficiency and  
 16 currently with the Cormorant it's twice a year  
 17 week in simulator, essentially going through  
 18 all the flight parameters, emergencies, and  
 19 things like that. So they do every six  
 20 months.

21 MS. FAGAN:  
 22 Q. Is there SAR mission simulator training? Is  
 23 that kind of training available, or is it  
 24 general flying simulator?

25 COLONEL DROVER:

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1 A. Currently it's a general flying simulator, we  
 2 do not have full mission simulators to  
 3 simulate search and rescue, and until we get  
 4 one, we depend on live training exercises,  
 5 using the aircraft to do the SAR sequences,  
 6 which we do periodically -- quite frequently,  
 7 actually.

8 MS. FAGAN:  
 9 Q. How does simulator training affect the  
 10 effectiveness or the abilities for SAR  
 11 missions?

12 COLONEL DROVER:  
 13 A. What it does, the simulator allows us to train  
 14 in emergency procedures and it ensures the  
 15 proficiency of the air crew. It would be --  
 16 have to be -- those types of training sessions  
 17 you would have to do in the aircraft to ensure  
 18 those proficiencies. So it allows us to  
 19 essentially have fewer flying hours and more  
 20 simulator hours to maintain that high degree  
 21 of simulation.

22 MS. FAGAN:  
 23 Q. Okay, thank you. Now what about the  
 24 technicians?

25 COLONEL DROVER:

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1 A. Search and rescue technicians. Again we've  
 2 talked a little bit about our search and  
 3 rescue technicians. They're an essential part  
 4 of the crew team, if you will, and they  
 5 feature a high degree of medical training and  
 6 competency, versed in aircraft based  
 7 operations and techniques used to penetrate  
 8 distress sites from those aircraft in most  
 9 terrains and most environments. It has a  
 10 similar sort of progression chart as with the  
 11 front end crew. We again attract potential or  
 12 future SAR techs from existing members, or  
 13 we're now into direct recruiting occasionally.  
 14 They go into a selection phase and then they  
 15 get into -- what I've got here is CF SAR is  
 16 our SAR school, and I have a few words on that  
 17 here. Their development is similar to a  
 18 pilot, the TM is team member, and TL is team  
 19 leader. So you can align that with co-pilot  
 20 or first officer and aircraft commander.  
 21 Their timed in development because they have  
 22 so many requirements to go through and to  
 23 learn to become a team leader, it's a very  
 24 lengthy process as it turns out, because these  
 25 individuals in just their daily activity make

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1 life and death decisions and they need to be  
 2 able to be competent and well versed in all  
 3 the protocols that are involved in the  
 4 business of search and rescue, and experience  
 5 with very, very extensive training and  
 6 preparation is what is required and it's what  
 7 we provide.

8 MS. FAGAN:  
 9 Q. So according to this, there's six and a half,  
 10 almost seven years before they reach the point  
 11 of team leader, and that's when they're  
 12 selected?

13 COLONEL DROVER:  
 14 A. That's correct.

15 MS. FAGAN:  
 16 Q. They could have years before they're even  
 17 selected?

18 COLONEL DROVER:  
 19 A. Yeah, in terms of -- if they came from another  
 20 occupation, like, we get them from all areas  
 21 for sure, and it may be shorter than that, but  
 22 it's a function of how much exposure and  
 23 experience that they get along the way and  
 24 training.

25 COMMISSIONER:

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1 Q. Excuse me, there would be certain -- to be a  
 2 SAR tech team member --  
 3 COLONEL DROVER:  
 4 A. Right.  
 5 COMMISSIONER:  
 6 Q. Training of 18 months approximately, but that  
 7 would be on top of a certain degree of formal  
 8 education, obviously?  
 9 COLONEL DROVER:  
 10 A. Yes, sir, and if they came from another  
 11 occupation, there's occupational training,  
 12 there's military experience, so before they  
 13 even enter the stream of SAR techs, they come  
 14 with some basic training and a degree of  
 15 education, and that's -- I'm not entirely sure  
 16 what that is, but they certainly have those  
 17 requirements.  
 18 COMMISSIONER:  
 19 Q. I see. So they are military people to start  
 20 with?  
 21 COLONEL DROVER:  
 22 A. For the most part, we are starting to recruit  
 23 as an initial trait, but even that, they would  
 24 still get the basic military training before  
 25 they enter their occupational training. So

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1 that's similar to -- it's the same model,  
 2 actually, of all our military occupational  
 3 traits. So in that regard, it starts with a  
 4 military boot camp, if you will, and it  
 5 progresses from there to occupational  
 6 training. This is occupational training.  
 7 Probably one of the more intensive ones, and  
 8 I'll describe here what it takes to go through  
 9 this --  
 10 COMMISSIONER:  
 11 Q. So we know that -- I suppose, in total, with  
 12 military training, the basic military  
 13 training, and then the occupational training,  
 14 you can't get even a team member, I should  
 15 think, much less than what, two and a half  
 16 years or something in that order?  
 17 COLONEL DROVER:  
 18 A. To get them on the squadron, it could take  
 19 that long. That's why we have a constant  
 20 challenge, if you will, in our school house to  
 21 maintain enough in-take, enough people in  
 22 training, to ensure that we have those  
 23 qualified individuals that can serve for a  
 24 fair number of years on the output side, to  
 25 make sure that we are able to field SAR tech

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1 capability.  
 2 COMMISSIONER:  
 3 Q. And this would take a high level of physical  
 4 fitness too, I should think?  
 5 COLONEL DROVER:  
 6 A. They are one of the more fit occupations that  
 7 are out there, and as I'll go through, I've  
 8 got a couple of slides along the way to  
 9 describe some of the training elements, their  
 10 medical skills, and it is a very demanding  
 11 occupation. Not for everybody for sure.  
 12 COMMISSIONER:  
 13 Q. No, I can certainly understand that. Thank  
 14 you.  
 15 MS. FAGAN:  
 16 Q. So we have four or five slides or more even on  
 17 the school and the capability. We have about  
 18 another four minutes left to go. I don't know  
 19 if you want to just describe the schools and  
 20 then --  
 21 COLONEL DROVER:  
 22 A. I can go through this because we've already  
 23 mentioned it a few times, if I may.  
 24 MS. FAGAN:  
 25 Q. And when we get to the break, we can continue

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1 on after lunch, but if you could just give us  
 2 the schools, where they're located?  
 3 COLONEL DROVER:  
 4 A. Sure, yeah, indeed, and again we're talking  
 5 about our search and rescue occupational  
 6 training, and our main training school is  
 7 located in Comox, and you'll recall that it's  
 8 also one of our SAR bases. So they have their  
 9 own facilities, training facilities, but for  
 10 the actual practical application of flying,  
 11 they use the resources of 442 Squadron in the  
 12 form of our helicopter and our Buffalo. They  
 13 have satellite areas where they train sea  
 14 survival in Comox as well off base. Jarvis  
 15 Lake is where they do some of their land sort  
 16 of high altitude work, cold weather. In  
 17 Resolute Bay is where they do their Arctic  
 18 training phase.  
 19 MS. FAGAN:  
 20 Q. So if you were going to train as a SAR tech,  
 21 would you end up at all four of these  
 22 locations in your education career?  
 23 COLONEL DROVER:  
 24 A. Yeah, the basic school is in Comox, but during  
 25 their phase training, they do deploy to those

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1 various locations to do the specific training  
 2 that's called for.  
 3 MS. FAGAN:  
 4 Q. Perhaps you can go through a little bit on the  
 5 course, the basic course, and then we'll have  
 6 to break.  
 7 COLONEL DROVER:  
 8 A. Okay. So basically again it's pretty much a  
 9 year long event, eleven months, as the  
 10 schedule works, and it includes all the  
 11 disciplines that will sort of go into the  
 12 makeup of their abilities and skills; winter,  
 13 ground, arctic operations. Medical is a large  
 14 portion of it. They get a lot of their  
 15 medical training or assistance from the  
 16 Justice Institute of British Columbia, and  
 17 they have paramedic program responsibilities,  
 18 so they train in conjunction with those.  
 19 Parachute operations, helicopter operations,  
 20 sea survival, diving, overturned vessel,  
 21 mountain operations, tech rock, snow, ice.  
 22 Operation and evaluation phase takes in a very  
 23 busy and challenging year. Just a quick  
 24 series of -- which will just sort of amplify  
 25 what I said with a few pictures. Obviously,

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1 they can go from either type of our aircraft  
 2 and the whole idea is they provide emergency -  
 3 and it's not emergency first aid, this is life  
 4 saving rendering medical protocols. So  
 5 they're trained to be able to support and  
 6 sustain life until we can execute a rescue and  
 7 get the casualties/victims to a medical  
 8 facility, and they can operate over water or  
 9 in the mountains.  
 10 MS. FAGAN:  
 11 Q. And I think what I'll do is we'll stop there  
 12 because I do have a -- I don't want to go  
 13 through this too quickly, and I do have a few  
 14 questions. So while we're on their  
 15 capabilities, if we can break and then deal  
 16 with that after lunch.  
 17 COMMISSIONER:  
 18 Q. All right, see you back at 2 o'clock.  
 19 (RECESS)  
 20 MS. FAGAN:  
 21 Q. Okay, Colonel Drover, just before lunch we  
 22 were dealing with the SAR Tech capabilities  
 23 and I didn't want to cut you short on that,  
 24 especially if it takes so many years to become  
 25 a SAR tech. Could you continue on with your

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1 description?  
 2 COLONEL DROVER:  
 3 A. I shall do that, thank you very much, and  
 4 perhaps before I start the next slide, Mr.  
 5 Commissioner, you asked a question before  
 6 lunch that I didn't have a precise answer in  
 7 terms of the time to refuel. I had my SAR  
 8 tech friends as others sort of report to me,  
 9 that as I quoted this morning, 20 minutes on  
 10 average with a high speed connection is  
 11 normally the time it would take to refuel a  
 12 helicopter.  
 13 COMMISSIONER:  
 14 Q. I see.  
 15 COLONEL DROVER:  
 16 A. It can be shorter if we do it in a hot  
 17 refuelling, keeping the engines running, and  
 18 it could be longer if we don't have that high  
 19 pressure connection.  
 20 COMMISSIONER:  
 21 Q. I see, okay, thank you.  
 22 COLONEL DROVER:  
 23 A. Okay, so we'll pick up where we stopped for  
 24 lunch talking about the SAR tech capabilities.  
 25 These are just a series of slides that just

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1 highlight some of the areas that I mentioned  
 2 earlier in their year long training program. A  
 3 point to note here when we talk about  
 4 preparing and evacuating casualties,  
 5 oftentimes especially in a land scenario where  
 6 the victims may be incapacitated and in a  
 7 remote area in a treed or mountain area, the  
 8 SAR techs not only have to treat the  
 9 significant casualties injuries at the scene,  
 10 they have to be able to prepare the patients  
 11 for extraction. Sometimes this is a fairly  
 12 lengthy process, and, of course, the  
 13 helicopter has to be in the vicinity as soon  
 14 as this procedure is complete and the  
 15 helicopter does the rescue. Sometimes it's  
 16 challenging in terms of time available for the  
 17 helicopter with fuelling, and occasionally the  
 18 helicopter will actually go and refuel and  
 19 return to the site if there's a very  
 20 complicated series of events that take place  
 21 on the ground. So the SAR techs really when  
 22 they get on the ground in a circumstance like  
 23 this, they have a lot of work in front of them  
 24 at times, depending on the nature and severity  
 25 of those injuries. So again we've kind of

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1 talked about the various climate and  
 2 conditions that they encounter, and I  
 3 mentioned when we saw that video this morning,  
 4 those are fairly controlled climatic  
 5 conditions which are not often encountered in  
 6 the real world search and rescue situation.  
 7 Communications is important especially after  
 8 SAR techs deploy from the aircraft. They need  
 9 to stay in contact with the aircraft. It's a  
 10 two way explaining if there's any additional  
 11 equipment required at the scene so that they  
 12 can either -- if it's a fixed wing aircraft,  
 13 drop with parachutes some additional medical  
 14 equipment, say, or if other things are  
 15 required to be hoisted in by helicopter, and  
 16 also it's an opportunity or it's important  
 17 that the airplane stays in contact with the  
 18 SAR techs to make sure they're in good  
 19 condition and continues to do their duties.  
 20 Of course, depending on the situation and the  
 21 environment they face, they are sometimes  
 22 required to operate various snowmobiles, ATVs,  
 23 and manage their resources and everything at  
 24 hand. So they're fairly versatile in terms of  
 25 operating equipment for sure.

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1 MS. FAGAN:  
 2 Q. So that would bring you to slide 57?  
 3 COLONEL DROVER:  
 4 A. That's correct.  
 5 MS. FAGAN:  
 6 Q. Okay. Now how do the SAR techs remain current  
 7 once they're trained? What do you do as a  
 8 checking process?  
 9 COLONEL DROVER:  
 10 A. Again similar to the air crew, the flying  
 11 crew, they have standards and requirements to  
 12 meet to maintain their competency and their  
 13 currencies. The same organization that  
 14 provides the standard of L Team also does the  
 15 evaluation and checks for the SAR techs.  
 16 Individual skills, the medical re-  
 17 certification every two years. They do an  
 18 annual dive proficiency, an annual proficiency  
 19 exam is written and a written test, and they  
 20 do periodic flight checks, SAR scenarios.  
 21 MS. FAGAN:  
 22 Q. Where would they be from a medical experience  
 23 or their level of medical skill? You know,  
 24 we've heard the term of a paramedic or the  
 25 equivalent of a nurse or a registered nurse,

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1 and then you have a physician, and there may  
 2 be other categories as well. Approximately  
 3 what level or is there an equivalency for the  
 4 SAR techs medical education and skills?  
 5 COLONEL DROVER:  
 6 A. There's no civilian equivalent category. They  
 7 do possess medical skills which would be about  
 8 the basic paramedic skills. They do do minor  
 9 surgery. They have training and skills that  
 10 really is geared towards the saving of lives.  
 11 It's not necessarily what you would see in a  
 12 hospital, but it is more than a first aid for  
 13 sure. Way more, as a matter of fact. So they  
 14 -- and a large part, as I mentioned, of the  
 15 training program is focused around those  
 16 medical skills and abilities.  
 17 MS. FAGAN:  
 18 Q. What type of medical equipment or supplies  
 19 would they use in the way of medical  
 20 instruments? Defibrillators, any type of  
 21 drugs or medication that they're authorized to  
 22 use?  
 23 COLONEL DROVER:  
 24 A. We have a standard sort of medical package  
 25 that includes splints and bandages and things

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1 you would expect of first aid, and they have  
 2 special equipment. Defibrillators, if  
 3 required, that can be loaded on the aircraft  
 4 depending on the requirements. They have  
 5 narcotics which they're authorized to  
 6 administer like morphine. So they've had  
 7 fairly advanced medical supplies that is part  
 8 of their standard equipment, plus the aircraft  
 9 itself, of course, has stretchers and litters  
 10 and things like that.  
 11 MS. FAGAN:  
 12 Q. Who trains the DND SAR techs, who are the  
 13 trainers, the educators?  
 14 COLONEL DROVER:  
 15 A. Back to our training school is where we have  
 16 that dedicated school and they do phase  
 17 training around the country as we described.  
 18 Most of the instructors are actually senior  
 19 SAR techs, very senior SAR techs that have had  
 20 many years of field experience. We do draw on  
 21 the BC Justice Institute to provide the medial  
 22 training, and we do call on civilian  
 23 contracted support to do mountain training,  
 24 arctic survival training, and that sort of  
 25 thing. So it's a fairly comprehensive

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1 combination, I guess, of a civilian specialist  
 2 and our own SAR tech specialists that perform  
 3 the academic package.  
 4 MS. FAGAN:  
 5 Q. At the SAR tech schools, are there any  
 6 civilians trained at the SAR tech school or  
 7 are they just military personnel?  
 8 COLONEL DROVER:  
 9 A. We train just the military personnel, and we  
 10 have a full capacity sort of in-house group  
 11 continually.  
 12 MS. FAGAN:  
 13 Q. Okay. Now if you could move to the section,  
 14 and I believe this is your last section, but  
 15 it's a very substantial section on operations,  
 16 and I believe you're going to start with the  
 17 incident distribution and some statistics so  
 18 that we can have a sense as to exactly how  
 19 many missions are run and where they're run?  
 20 COLONEL DROVER:  
 21 A. Indeed, and I think it's important again to  
 22 consider the national perspective or federal  
 23 provision of SAR is for the whole country, and  
 24 based on that, with the statistics and the  
 25 experiences, I've got a number of slides which

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1 will visually explain the types of incidents  
 2 and where they are most likely to occur. The  
 3 distribution pattern that you can see on this  
 4 chart basically mirrors where the population  
 5 density of the country is, and there's no big  
 6 surprise with more people, you have more  
 7 activity, which will lead to more instances of  
 8 rescue requirements. The majority of  
 9 incidents are certainly marine as opposed to  
 10 aviation of land-based, and our -- I guess,  
 11 again a bit of philosophy is that the whole  
 12 sort of focus of our SAR response is to  
 13 provide the greatest amount of good in the  
 14 least amount of time, and that means that we  
 15 need to be postured so that we can respond to  
 16 all incidents and get there as quickly as  
 17 possible, so those locations become important.  
 18 MS. FAGAN:  
 19 Q. And this first slide, slide 58, I believe this  
 20 is from 1998 to 2001, correct?  
 21 COLONEL DROVER:  
 22 A. It is. I've got some more current statistics  
 23 in the next couple of slides and the pattern  
 24 has not changed. It's fairly consistent over

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1 the years.  
 2 MS. FAGAN:  
 3 Q. Okay, and the next slide is not quite the same  
 4 time period, but pretty close to the same time  
 5 period, and what's the difference between this  
 6 slide and the earlier one?  
 7 COLONEL DROVER:  
 8 A. Essentially the distribution is -- this is a  
 9 shorter period of time, so there's fewer dots,  
 10 of course, but the same sort of densities are  
 11 in place. What this chart shows, though, it  
 12 shows where we have our primary search and  
 13 rescue units located and the secondary ones  
 14 are depicted in yellow, but again, as depicted  
 15 here, is where the most concentrated activity  
 16 takes place. So it's just to illustrate that  
 17 they're aligned.  
 18 MS. FAGAN:  
 19 Q. And the secondary there, the areas where  
 20 they're -- it's indicated SAR assets.  
 21 COLONEL DROVER:  
 22 A. That is the secondary SAR. Those are the  
 23 helicopters and support units I briefed on  
 24 with SAR techs.  
 25 MS. FAGAN:

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1 Q. With SAR techs.  
 2 COLONEL DROVER:  
 3 A. So moving on, we talked about the incident  
 4 distribution, and we actually have categories  
 5 that define the various types of incidents and  
 6 they will be presented in this manner and I'll  
 7 speak to each. An aeronautical incident is a  
 8 search and rescue incident involving an  
 9 aircraft over land, and a maritime incident,  
 10 again it's a vessel, including medical  
 11 evacuation of persons from a vessel, so people  
 12 in the water, and an aircraft over water is  
 13 also treated as a marine incident.  
 14 MS. FAGAN:  
 15 Q. A marine incident?  
 16 COLONEL DROVER:  
 17 A. That's correct.  
 18 MS. FAGAN:  
 19 Q. So the flight 491 was an aircraft, but over  
 20 water, so that would be in the marine  
 21 category?  
 22 COLONEL DROVER:  
 23 A. That's where it would go. Now that has nothing  
 24 to do with how we respond, of course. That's  
 25 where we categorize where the incident is,

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1 but, yes, that's what the category is.  
 2 Finally it's the humanitarian category, and  
 3 this is an incident that doesn't fall into  
 4 aeronautical or maritime. That requires a CF  
 5 SAR response in order to preserve life or  
 6 relieves human suffering. Basically, most of  
 7 these are provincial jurisdiction, and it may  
 8 be coordinated through the EMO or local police  
 9 forces. We in the federal SAR system get  
 10 involved when the provincial responsible  
 11 agency cannot respond in a timely manner for a  
 12 variety of reasons. It could be the type of  
 13 equipment versus a weather situation, and in  
 14 those cases the request would be placed to our  
 15 system through the RCC to render assistance.  
 16 MS. FAGAN:  
 17 Q. So we've heard information on medevacs, or air  
 18 ambulance, and could you explain whose  
 19 jurisdiction or who would be responsible for a  
 20 medevac, and, in particular, medevac or air  
 21 ambulance in the province on land, or medevac  
 22 or air ambulance out to an oil rig?  
 23 COLONEL DROVER:  
 24 A. Okay, in a medevac which is in the category of  
 25 humanitarian response, of course, if there is

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1 a requirement within a province using this  
 2 example where a person needs to be moved to a  
 3 hospital, that's a provincial jurisdiction,  
 4 provincial responsibility, and they would be  
 5 the first choice in terms of providing that  
 6 service.  
 7 MS. FAGAN:  
 8 Q. So if we had a child in a remote location or  
 9 St. Anthony and it had to come into St.  
 10 John's, the first primary source would be the  
 11 Provincial Government would be responsible for  
 12 the air ambulance of that child into St.  
 13 John's?  
 14 COLONEL DROVER:  
 15 A. That is correct.  
 16 MS. FAGAN:  
 17 Q. Now how does JRCC get involved, because I  
 18 understand that on occasion you will do air  
 19 ambulance?  
 20 COLONEL DROVER:  
 21 A. That's correct. So obviously the health  
 22 services agency in Newfoundland would task  
 23 their air ambulance contracted service, or  
 24 whatever they have, I'm not entirely sure of  
 25 the right terms here, but -- and if that air

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1 ambulance service cannot respond for reasons,  
 2 that may be whether -- may be equipment  
 3 related, the provincial health agency will  
 4 contact RCC and place a request that the  
 5 military provide that service.  
 6 MS. FAGAN:  
 7 Q. Have you had that occur in the Newfoundland  
 8 area in the last year?  
 9 COLONEL DROVER:  
 10 A. Yes, more than one time. It's not an  
 11 infrequent occurrence. In fact, I think I've  
 12 got one here as an example. In early January  
 13 there was a patient to be transferred from  
 14 Central Newfoundland to St. John's, and the  
 15 air ambulance service was unavailable and the  
 16 Gander helicopter actually performed that  
 17 mission.  
 18 MS. FAGAN:  
 19 Q. So the Gander Cormorant is what transferred  
 20 the patient?  
 21 COLONEL DROVER:  
 22 A. Correct.  
 23 MS. FAGAN:  
 24 Q. Now when it comes to an oil rig, we have  
 25 heard, and we'll hear from Cougar next week,

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1 that one of its contracted services is to  
 2 provide air ambulance. Does JRCC get involved  
 3 in retrieving and air ambulance medevacs from  
 4 the oil rigs?  
 5 COLONEL DROVER:  
 6 A. Not normally. If there is a person off the  
 7 rigs that require evacuation to shore-based  
 8 medical facilities, it's normally given to  
 9 Cougar and they would perform that mission.  
 10 They are not required to inform the Rescue  
 11 Coordination Centre, and the Rescue  
 12 Coordinating Centre will not do anything in  
 13 terms of providing SAR resource backup. So  
 14 essentially it's not a federal responsibility  
 15 at this stage, and there would be no specific  
 16 actions taken by RCC.  
 17 MS. FAGAN:  
 18 Q. Okay, so would it be fair to say that the oil  
 19 rig manager, if they required a medevac, would  
 20 contact Cougar, ask for the medevac, Cougar  
 21 would perform that service and JRCC would not  
 22 be involved in a routine medevac off an oil  
 23 rig?  
 24 COLONEL DROVER:  
 25 A. That is correct.

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1 MS. FAGAN:  
 2 Q. Has JRCC ever been involved, and if so, do you  
 3 have an example or circumstance where you  
 4 would be involved in medevacing a worker off  
 5 the oil rig?  
 6 COLONEL DROVER:  
 7 A. The federal SAR services have been involved in  
 8 incidences that you described. We had a case  
 9 on the 20th of December of last year where  
 10 there was a requirement to move a patient off  
 11 the Stena Carron, experimental oil rig in the  
 12 south, and initially it was tasked to Cougar  
 13 and for reasons of weather here in St. John's,  
 14 Cougar couldn't dispatch their helicopter.  
 15 The request again would be transferred to the  
 16 RCC, which it was, and Gander was tasked and  
 17 Gander actually flew a helicopter to the rig  
 18 and returned the patient actually in this  
 19 instance to Sydney. The reason why Gander  
 20 could perform the mission is because of  
 21 weather situation in the interior of the  
 22 province that particular day that allowed them  
 23 to execute the mission. So that's an example  
 24 again if for whatever reason Cougar could not  
 25 perform that service, we'd get the call.

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1 Whether or not we could or could not, that's  
 2 another -- but at that stage, we accept that  
 3 mission as a federal responsibility.  
 4 MS. FAGAN:  
 5 Q. Does the JRCC or DND use the oil rigs or the  
 6 platforms out there to assist them in  
 7 conducting air ambulances?  
 8 COLONEL DROVER:  
 9 A. Indeed. Again, I think, in the environment we  
 10 live in, and I hope I've expressed it a little  
 11 bit so far, that there's a multi-  
 12 jurisdictional effort involved in search and  
 13 rescue, and a good example is when we actually  
 14 operate our SAR platforms helicopter offshore  
 15 at extended ranges, my helicopters can and  
 16 often do get fuelling from the rigs  
 17 themselves. I've got an example which also  
 18 speaks to another category of medevacs.  
 19 Oceangoing vessels in transit through our  
 20 waters or into our ports occasionally have  
 21 requirement to lift one of their crew or  
 22 passengers off the ship for a medical reason,  
 23 and that's a mission that we at RCC will  
 24 execute and perform. We had a case, I guess,  
 25 the 10th of January where a vessel was

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1 steaming and had a requirement to evacuate one  
 2 of the persons on board the ship. The ship  
 3 was well out to sea and we coordinated a  
 4 medevac where our helicopter -- we had to wait  
 5 some time for the ship to get in range, but  
 6 the helicopter actually refuelled off one of  
 7 the oil rigs and picked up the patient and  
 8 brought him to a shore-based medical facility.  
 9 MS. FAGAN:  
 10 Q. Now you had shown a chart early on this  
 11 morning in your presentation which showed the  
 12 jurisdiction through international agreements  
 13 for the East JRCC well out. It appeared to go  
 14 pretty well maybe four or five hundred miles  
 15 or more, the middle of the Atlantic.  
 16 COLONEL DROVER:  
 17 A. Yes.  
 18 MS. FAGAN:  
 19 Q. And when you say this vessel required service,  
 20 was this a Canadian vessel or a foreign  
 21 vessel, was it inside -- like, why did we  
 22 respond?  
 23 COLONEL DROVER:  
 24 A. Because it was inside those international

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1 territorial boundaries, so it was our  
 2 responsibility to respond as best we can.  
 3 This particular vessel was a foreign carrier,  
 4 and it's probably a good point to make here is  
 5 that the flag doesn't really matter in a  
 6 humanitarian, and indeed in any search and  
 7 rescue situation, it doesn't really matter the  
 8 nationality or the origin of the vessel or the  
 9 aircraft. The response is going to be towards  
 10 the objectives of responding and saving and  
 11 preserving life, and that's a tenant that's  
 12 international, so the same service would be  
 13 provided for a Canadian flag vessel off the  
 14 Alaskan coast or anywhere else.  
 15 MS. FAGAN:  
 16 Q. So when you say you were waiting for this  
 17 foreign flag ship to get within range, you  
 18 weren't waiting for it to get within the zone,  
 19 you were waiting for it to get within fuelling  
 20 range of the helicopter, would that be fair?  
 21 COLONEL DROVER:  
 22 A. That is absolutely fair, right. It's not  
 23 until we are legally authorized to respond,  
 24 it's our ability to respond that far out to  
 25 sea. Now clearly we don't have the capability



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1 of flying across the ocean in a helicopter,  
 2 and if that's the vehicle required to perform  
 3 the rescue, then there is -- and that's the  
 4 part about survivability, there are some sort  
 5 of areas where the sort of victims, if you  
 6 will, are more vulnerable and that's a time  
 7 factor which I'll talk about in a little  
 8 while.  
 9 MS. FAGAN:  
 10 Q. Okay, thank you. Now you have some  
 11 statistics. We just heard about three, and I  
 12 believe all of those were in the last four  
 13 weeks, four to five weeks. So how many  
 14 missions do you do?  
 15 COLONEL DROVER:  
 16 A. First of all, let me just display the total  
 17 number and these are inclusive of  
 18 humanitarian, marine, and air, and of all  
 19 categories. What it demonstrates, this is  
 20 broken down by our various regions, and those  
 21 numbers are fairly consistent year by year.  
 22 So we haven't really prevented the occurrence,  
 23 but it hasn't increased greatly either. If I  
 24 may move to this one here, this shows the  
 25 division by category. You may recall I

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1 mentioned a little while ago that the majority  
 2 of the incidents are indeed marine, and this  
 3 one -- or maritime.  
 4 MS. FAGAN:  
 5 Q. So the marine are almost ten times the  
 6 aeronautical?  
 7 COLONEL DROVER:  
 8 A. Uh-hm.  
 9 MS. FAGAN:  
 10 Q. Okay.  
 11 COLONEL DROVER:  
 12 A. I've got a few charts that's really kind of  
 13 focused on the east coast because I think it's  
 14 of interest to this body here, and again  
 15 there's just another way to express the type  
 16 of incidents and where they have occurred, and  
 17 here's a little bit more recent data from 2004  
 18 to 2009, and that's in the Newfoundland region  
 19 depicts -- this is just what we responded to  
 20 using Gander as an asset. Now there are more  
 21 activity -- there was more activity in this  
 22 area, may have been responded by Coast Guard,  
 23 and it just doesn't show on this chart, this  
 24 was purely to outline where the helicopter  
 25 based activity was focused.

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1 MS. FAGAN:  
 2 Q. So on the earlier slide, because some people  
 3 may not actually be able to see this  
 4 PowerPoint, on the earlier slide 65, it had  
 5 indicated that in 2008 it was 191 aeronautical  
 6 and 1,752 marine out of the Halifax --  
 7 COLONEL DROVER:  
 8 A. Right.  
 9 MS. FAGAN:  
 10 Q. So that would be that entire --  
 11 COLONEL DROVER:  
 12 A. Correct.  
 13 MS. FAGAN:  
 14 Q. JRCC. So when it says Halifax, that would  
 15 include Gander?  
 16 COLONEL DROVER:  
 17 A. Yes, quite right.  
 18 MS. FAGAN:  
 19 Q. And Greenwood. So now you've taken us down in  
 20 your next slide to just what Squadron 103 --  
 21 COLONEL DROVER:  
 22 A. Exactly.  
 23 MS. FAGAN:  
 24 Q. The Gander base does, and this wouldn't  
 25 include what was coming out of Greenwood or

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1 marine?  
 2 COLONEL DROVER:  
 3 A. That's correct.  
 4 MS. FAGAN:  
 5 Q. And then I believe you have some numbers there  
 6 as to what all these dots mean?  
 7 COLONEL DROVER:  
 8 A. Okay. So this -- again this is sort of  
 9 narrowing it down for a more precise period,  
 10 and it also shows the various types. Again  
 11 the split is, as we discussed earlier, the  
 12 predominance of maritime, and it shows out of  
 13 Gander where they're located relative to  
 14 Gander.  
 15 MS. FAGAN:  
 16 Q. So this is just -- this would be 11 months,  
 17 would that be fair?  
 18 COLONEL DROVER:  
 19 A. Correct.  
 20 MS. FAGAN:  
 21 Q. So in 11 months, Gander conducted 90 missions?  
 22 COLONEL DROVER:  
 23 A. Correct.  
 24 MS. FAGAN:  
 25 Q. And 63 are maritime, and 12 are aeronautical,

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1 and 21 humanitarian. So the aeronautical ones  
 2 that are over the water would fall up into  
 3 marine. So the aeronautical ones are only the  
 4 air on land?  
 5 COLONEL DROVER:  
 6 A. Correct.  
 7 MS. FAGAN:  
 8 Q. Okay, that's fine.  
 9 COLONEL DROVER:  
 10 A. Okay, just a couple of charts to talk about  
 11 the resources, and this was mentioned when I  
 12 was talking on a national perspective. It  
 13 just again talks about the two helicopters  
 14 serving the Halifax region, the Hercules. We  
 15 have two postures. Either the aircraft are on  
 16 a half an hour to 30 minute response posture,  
 17 or two hour response posture, and we average  
 18 getting airborne in less than those stated  
 19 numbers by a good margin, 25 minutes for the  
 20 30 minute, but for the two hour posture, we  
 21 can manage an average of 70 minutes being  
 22 airborne.  
 23 MS. FAGAN:  
 24 Q. What's the difference in the 30 minute posture  
 25 and the two hour posture? When are those

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1 postures, and then what is in -- what's  
 2 actually physically in place on each of those  
 3 different postures?  
 4 COLONEL DROVER:  
 5 A. Right. The 30 minute posture is basically  
 6 where the crews are with -- in the hangar,  
 7 prepared to launch, if you will, and the two  
 8 hour posture is they're not required to be in  
 9 the hangar, they're on pager and they're  
 10 recalled -- not too far from the airport. We  
 11 have restrictions on how far you're allowed to  
 12 stray from the flight line. So that reflects  
 13 a longer period of time for the crews to  
 14 muster and prepare for flight.  
 15 MS. FAGAN:  
 16 Q. Okay, and the Commissioner asked you earlier  
 17 if the aircraft were fuelled. So whether it's  
 18 the 30 minute or the two hour, are the  
 19 aircraft fuelled?  
 20 COLONEL DROVER:  
 21 A. They are indeed. The aircraft is prepared for  
 22 flight, and after each mission, be it training  
 23 or a SAR operation, the aircraft is very  
 24 quickly returned to the status that is  
 25 prepared to be flown for another SAR mission

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1 fully -- fully restocked and refuelled.  
 2 MS. FAGAN:  
 3 Q. Are you aware of the SAR medevac response  
 4 times in other jurisdictions, do you know if  
 5 everybody maintains the 30 and two? In other  
 6 jurisdictions, are you aware of --  
 7 COLONEL DROVER:  
 8 A. I would ask what you refer to as other  
 9 jurisdictions?  
 10 MS. FAGAN:  
 11 Q. Oh, I was thinking maybe in the US or the  
 12 North Sea, or different industries.  
 13 COLONEL DROVER:  
 14 A. Other nations.  
 15 MS. FAGAN:  
 16 Q. Nations.  
 17 COLONEL DROVER:  
 18 A. Each nation has their own SAR program catered  
 19 to the specific needs of that particular  
 20 nation. So it varies quite a bit, and offhand  
 21 I can't report on a particular standby posture  
 22 for a particular country, but most countries  
 23 that I'm aware of that have a SAR capability  
 24 have a standby posture that is manned, fully  
 25 manned and fully responsive. I just don't

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1 know their times.  
 2 MS. FAGAN:  
 3 Q. But it does vary. This isn't unusual to have  
 4 these postures?  
 5 COLONEL DROVER:  
 6 A. No, no.  
 7 MS. FAGAN:  
 8 Q. It's just they're not exactly the same  
 9 everywhere you go?  
 10 COLONEL DROVER:  
 11 A. No.  
 12 MS. FAGAN:  
 13 Q. The next slide you have, I believe, is the  
 14 secondary assets which you spoke of and where  
 15 they're located. So if you could explain this  
 16 slide, please?  
 17 COLONEL DROVER:  
 18 A. I introduced a couple of these aircraft when I  
 19 spoke of the secondary aircraft that are  
 20 available, and indeed I also went on to  
 21 explain that any military aircraft can be  
 22 called to service, and some are more suitable  
 23 than others, if you will. Sea King, of course,  
 24 as I mentioned earlier, is a very capable  
 25 aircraft and that can be brought into SAR

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1 operations, as well the Aurora, we mentioned  
 2 that, and the Griffon, which are in our  
 3 support squadrons for this region, Goose Bay  
 4 and Quebec.  
 5 MS. FAGAN:  
 6 Q. Now you then talked about your voluntary, and  
 7 I believe this slide -- the next slide helps  
 8 with the voluntary aspects, and could you  
 9 explain this a little?  
 10 COLONEL DROVER:  
 11 A. Again I briefed you earlier today on our  
 12 program, CASARA, where we sponsor an  
 13 organization of volunteers and they provide a  
 14 number of aircraft as well as spotters, and in  
 15 the Atlantic area here, I'll just call up some  
 16 numbers which depicts they have several  
 17 aircraft here in St. John's, and a whole  
 18 number of spotters. Deer Lake has some and  
 19 then up in Wabush.  
 20 MS. FAGAN:  
 21 Q. So these spotters, in St. John's there's four  
 22 aircraft and 49 spotters. How often, not  
 23 necessarily St. John's, but how often would  
 24 these assets be tasked or used? We had --  
 25 Gander had 90 missions in the last 11 -- you

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1 know, the first 11 months of '09. How often  
 2 would you use the CASARA people?  
 3 COLONEL DROVER:  
 4 A. I don't have the statistics on that. It's not  
 5 routine. If they -- they normally would  
 6 participate in a SAR operation that involved a  
 7 search phase. A lot of the ones that we  
 8 described in Gander were a task mission either  
 9 for medevac, which is categorized in there, or  
 10 for a ship taking on water or that sort of  
 11 thing. CASARA wouldn't be involved in those  
 12 types of incidents, but -- so they don't get  
 13 called into service all that much, but the  
 14 notion that any time we would conduct search  
 15 operations, say, in central Newfoundland, we  
 16 have a pool of resources and they would be  
 17 tasked to do that, and as I mentioned earlier,  
 18 we do train on a frequent basis to keep those  
 19 folks current as well.  
 20 MS. FAGAN:  
 21 Q. So are there spotters in Gander, and maybe you  
 22 don't know this, because as I understand it,  
 23 the spotter can be on the aircraft that are  
 24 owned or operated by the volunteers, but you  
 25 also on occasion use spotters, and maybe I'm

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1 wrong, civilian spotters to help?  
 2 COLONEL DROVER:  
 3 A. You've got it right.  
 4 MS. FAGAN:  
 5 Q. So are there spotters in the Gander area?  
 6 COLONEL DROVER:  
 7 A. We don't have a CASARA unit in Gander, but if  
 8 we were undertaking search operations, I've  
 9 got 49 here in St. John's, so we would just  
 10 sort of assign as many as were available, and  
 11 wherever we're locating our search operation  
 12 from, they would be taken care of and they  
 13 would be sort of integrated in our crews.  
 14 MS. FAGAN:  
 15 Q. Okay. Now you talked about leveraging assets  
 16 and can you explain what this slide is? It's  
 17 entitled the "Commercial Resources Known to  
 18 JRCC".  
 19 COLONEL DROVER:  
 20 A. I can. As I perviously mentioned, the  
 21 business of SAR involves more than just the  
 22 federally assigned primary asset, and through  
 23 the coordination that takes place at the RCCs,  
 24 occasionally a commercial operator will be  
 25 requested to provide some support for SAR

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1 operations. Part of the routine, if you will,  
 2 at the RCCs, is they are regionally baaed and  
 3 they're familiar with all the operators in the  
 4 region that actually have a capacity and a  
 5 capability that could render some assistance  
 6 if required and when required. So they  
 7 maintain, and as shown on this slide here, the  
 8 types of organizations that would be involved,  
 9 which include helicopter operations or with  
 10 the Provincial Airlines, PAL, which happen to  
 11 be the first aircraft that was on scene in the  
 12 Cougar incident. So there are a number of  
 13 assets out there. Depending on their location  
 14 and their suitability and serviceability, they  
 15 can be brought into search operations.  
 16 MS. FAGAN:  
 17 Q. So on this slide, for example, you have  
 18 Universal Helicopters and Canadian Helicopters  
 19 and Cougar Helicopters. They're all  
 20 commercial operators, as I understand it. How  
 21 does JRCC get the information on them as to  
 22 how many helicopters they have or what type of  
 23 helicopters? I mean, how do you gather that  
 24 information?  
 25 COLONEL DROVER:

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1 A. Again, because the JRCCs are regionally based,  
 2 one of their responsibilities is to determine  
 3 what is the asset base in that particular  
 4 region. They make contact with companies. If  
 5 a new company started up, they would make  
 6 communication with that company to find out  
 7 the points of contact, learn their capacities  
 8 or capabilities and this dialogue actually  
 9 takes place quite frequently with these  
 10 operators. Remember back to our database,  
 11 that is part of the database. So if an  
 12 incident took place where Canadian Helicopters  
 13 were fairly close, they very quickly would  
 14 call up the database that spoke -- that gave  
 15 all the contact numbers, the numbers of  
 16 aircrafts, and then they can go from there to  
 17 contact Canadian and see if Canadian could  
 18 render assistance.

19 MS. FAGAN:  
 20 Q. Does JRCC know what Cougar Helicopters'  
 21 capabilities are?

22 COLONEL DROVER:  
 23 A. They do.

24 MS. FAGAN:  
 25 Q. And when a new oil rig begins drilling -- I

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1 mean, you had said earlier that the oil fields  
 2 are plotted and the rigs are plotted, but what  
 3 about when a new oil rig is introduced to an  
 4 area? How do you -- what information do you  
 5 obtain and how does that come about?

6 COLONEL DROVER:  
 7 A. At the JRCC in Halifax, they maintain -- they  
 8 have actually a large document which captures  
 9 all the vital information for each particular  
 10 rig, its location number, folks, the size  
 11 capacities, which it's provided by the  
 12 operators of the rigs and when they stand up a  
 13 new capability or if they move one of their  
 14 mobile platforms, they report that information  
 15 to the JRCC. So this is vital information for  
 16 this coordination that we talked about a  
 17 little earlier and this is a shared  
 18 information flow. There's no resistance to  
 19 acquire the information. The industry readily  
 20 provides it and we document and capture it.  
 21 So we have it readily available when required.

22 MS. FAGAN:  
 23 Q. Okay. Now we have had presentations here, and  
 24 it's clear that when it comes to regulating  
 25 the production offshore, it is regulated

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1 through the C-NLOPB, the Canadian Labrador  
 2 (sic) Offshore Petroleum Board, and does DND  
 3 have any contact with the Board or does the  
 4 information come from the rigs? I mean, how  
 5 does -- do you have a formal line of  
 6 communications with the regulator?

7 COLONEL DROVER:  
 8 A. As far as I know, there is no established, at  
 9 the policy level or headquarters level, any  
 10 interface between the organization and the  
 11 federal departments that are involved in  
 12 search and rescue. As I described, at the --  
 13 what I refer to as the tactical level, there  
 14 is that constant exchange of information and  
 15 cooperation, but at the -- in terms of getting  
 16 involved in locations and things like that,  
 17 I'm not aware and I certainly haven't been  
 18 personally involved.

19 MS. FAGAN:  
 20 Q. Okay. DND knows what Cougar Helicopters and  
 21 some of the other providers are capable of.  
 22 Does DND provide any oversight of search and  
 23 rescue -- like Cougar Helicopters is  
 24 contracted to provide first response to the  
 25 oil operators. They're to conduct medevacs.

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1 Similar type tasks that are conducted by DND.  
 2 Does DND provide any oversight? Do you do any  
 3 training of Cougar Helicopters' SAR techs, for  
 4 example?

5 COLONEL DROVER:  
 6 A. No, there is no oversight provided by CF.

7 MS. FAGAN:  
 8 Q. Okay, and does CF conduct any audits of Cougar  
 9 Helicopters' search and rescue capabilities?

10 COLONEL DROVER:  
 11 A. No, we do not.

12 MS. FAGAN:  
 13 Q. Now the next slide that you have here is a SAR  
 14 incident time line, and I understand you're  
 15 going to take us through the phases of a SAR  
 16 incident and earlier, you had mentioned the  
 17 time factor in providing notice and in here,  
 18 perhaps you may be able to elaborate on how  
 19 that affects a successful SAR mission?

20 COLONEL DROVER:  
 21 A. Thank you. I showed an earlier chart which  
 22 showed the incident and our response and that  
 23 period in between where the survivability  
 24 factor was at play. This is another way of  
 25 depicting the phases, if you will, of a search

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1 and rescue incident and it's done on a time  
 2 line, and there are a number of points I'd  
 3 like to make, so I'll just sort of walk  
 4 through with those that have this up on their  
 5 view, from incident occurrence to the  
 6 evacuation and the resolution of the incident  
 7 itself, and you'll see, first of all, on the  
 8 chart, two zero times. It's a system, I call  
 9 it point of vulnerability, and then there's a  
 10 zero a little further along to the right.  
 11 An incident occurs at some time. The  
 12 very critical phase to a whole search and  
 13 rescue operation is alerting or notification,  
 14 because until the SAR forces are aware that  
 15 there's an incident has taken place, there's  
 16 obviously no way that a proper response can be  
 17 mounted. Earlier, I mentioned about the  
 18 beacons, the 406 EPIRBs and ELTS. If, for  
 19 instance, an aircraft were to crash land,  
 20 activating its ELT, through the satellite  
 21 technology, we get near real time report of an  
 22 occurrence and a location that could be as  
 23 refined as five kilometres, but may be larger  
 24 than that, but it becomes refined with  
 25 subsequent passes of the satellite. This is

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1 enough information to take the first zero and  
 2 the second zero and in a matter of minutes,  
 3 we're into the next phase and the next phase  
 4 being we have started a SAR case and we've  
 5 taken some directed actions to come up with a  
 6 SAR response.  
 7 But not all cases will be that quickly  
 8 reported. If an aircraft were in contact with  
 9 traffic services, air traffic control,  
 10 declared an emergency and subsequently dropped  
 11 off the radar, for instance, that would be  
 12 reported very quickly to RCC and that would  
 13 initiate a SAR case. As I mentioned this  
 14 morning, sometimes it's not that quickly  
 15 reported. Ships at sea have mandatory  
 16 reporting times. If they do not report, there  
 17 are sort of times where they can be overdue  
 18 before we alert the SAR system. Aircraft that  
 19 operate without flight plans may actually be  
 20 operating and not informing anybody that  
 21 they're in remote areas flying around, get  
 22 into trouble, and if they don't have a beacon,  
 23 it may not be reported until next of kin calls  
 24 in, a concerned citizen we call it, so all  
 25 that to say this alerting phase could be a

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1 matter of minutes or days, but it's very, very  
 2 critical to the outcome of a search and rescue  
 3 event.  
 4 Once the rescue coordinating centre gets  
 5 a confirmation that there is an incident, then  
 6 the response, the reaction takes place, which  
 7 is part of the response. The first decision  
 8 point that the RCC will make is to determine  
 9 how to respond, in terms of what assets to  
 10 respond to. In a marine incident, as I  
 11 described this morning, they have all the  
 12 databases to determine where the vessels are  
 13 and those include, of course, where the Coast  
 14 Guard actually dedicated SAR vessels are. So  
 15 they'll look at the location of the incident,  
 16 assuming that's well known, and look at where  
 17 those ships are. They may actually direct  
 18 ships to go to the crash site, and similarly,  
 19 they will look at where this location is  
 20 relative to where our SAR air forces are and  
 21 launch accordingly. So they may, if it's an  
 22 east coast event, use Greenwood, Gander or a  
 23 combination of both. You can never overtask,  
 24 especially initially when you don't really  
 25 have a full knowledge base of what you're

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1 dealing with. So if there's some doubt as to  
 2 the size of the incident that you're  
 3 responding to, then you would probably launch  
 4 more aircraft. You can always stand down  
 5 those aircraft. So it's very important to  
 6 mobilize those assets as quickly as possible.  
 7 Once those units are tasked, we'll stick  
 8 with the air dedicated SAR here for a moment,  
 9 to ease the description, the crews muster and  
 10 they get on their way as quickly as they can.  
 11 A little later actually, the last part of my  
 12 presentation, I'll talk about the sequence of  
 13 events that takes place in the squadron from  
 14 the time that they get the call to the time  
 15 that they dispatch and get on.  
 16 The next phase that we need to talk about  
 17 is the transit and this can be a very  
 18 straightforward exercise or it can be a little  
 19 complicated and it really depends on the  
 20 distance that the assets have to travel  
 21 relative to the base and the incident site,  
 22 and whether or not, for instance, the  
 23 helicopter, if we're talking helicopters, have  
 24 the range to be able to go to the incident  
 25 site, spend the time to execute the recovery

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1 and return to a land base or sometimes a rig  
 2 for refuelling and then return, or whether or  
 3 not they need to refuel on the outbound, which  
 4 -- so those dynamics go into this transit  
 5 time.  
 6 Mentioned this morning about the Hercules  
 7 and its capacities and capabilities.  
 8 Generally speaking, because of its endurance  
 9 and range, within most areas that we would  
 10 dispatch a helicopter, the Hercules can go  
 11 direct there and it sets up that dynamic that  
 12 we talked about, about the on-scene commander,  
 13 site reports, reporting of what is taking  
 14 place. Meanwhile, the helicopter is on route  
 15 and transit.  
 16 Not always, depending on when and how the  
 17 notification of an incident occurs, do we know  
 18 the precise location. If we don't know the  
 19 precise -- in other words, an example where an  
 20 aircraft failed to arrive at the airport, and  
 21 the last report of that aircraft was probably  
 22 30 minutes flying time from that airport, so  
 23 he hasn't been heard of for 30 minutes, and  
 24 you can look at the speed that aircraft is  
 25 travelling, say 200 knots. That's a lot of

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1 territory where potentially that aircraft  
 2 could be. So, and if there's no beacon and  
 3 other ways of locating that aircraft, that  
 4 really drives to the search phase, and the  
 5 search phase can be fairly quick or could take  
 6 a long time.  
 7 If there's a suspicion that there is a  
 8 search phase involved, so in other words the  
 9 initial reporting that the rescue centre got  
 10 was not fairly precise, in terms of where the  
 11 location is, that really dictates the launch  
 12 of additional assets. So you want to get as  
 13 many aircraft that that area can take that you  
 14 have available to do the search with a multi-  
 15 aircraft sort of capability.  
 16 Eventually, when the location is found or  
 17 when it was reported, the rest of the part of  
 18 the time dynamic is involved in getting the  
 19 proper resource to effect the rescue. I  
 20 mentioned our capability in terms of the  
 21 Hercules being able to dispatch SAR techs and  
 22 equipment and tents and all the survival type  
 23 things that you'd need over land. Over water,  
 24 with the life rafts and things. If the  
 25 helicopter is not yet on scene, part of that

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1 rescue activity actually takes place with a  
 2 fixed wing airplane delivering all those  
 3 provisions, as well as the SAR techs, to the  
 4 scene to prepare for the eventual arrival of  
 5 the helicopter. Generally speaking, a  
 6 helicopter is the aircraft that is to perform  
 7 the rescue, unless if it's a marine incident  
 8 and there is an able ship that actually can  
 9 take people out of the water, as an example.  
 10 If they're not injured, they may stay there.  
 11 Injuries, we could do a water transfer to a  
 12 ship and then we'd transfer with the  
 13 helicopter to the helicopter from the ship and  
 14 bring them to a medical facility.  
 15 So that is a time line. Each SAR event  
 16 is different, so you can show a graph, but the  
 17 times are variable, depending on the nature of  
 18 the incident and how it's reported.  
 19 MS. FAGAN:  
 20 Q. Okay, thank you. Who communicates with whom  
 21 on this? You mentioned your SAR techs and  
 22 this procedure. Who is speaking to whom and  
 23 in particular, when do aircraft operators or  
 24 pilots have to report their problems to JRCC?  
 25 COLONEL DROVER:

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1 A. Okay. Generally speaking, JRCC are not in  
 2 direct communication with aviators, with  
 3 pilots. The pilots are communicating with air  
 4 traffic services. NAV Can is responsible in  
 5 Canada, but it's air traffic control agencies.  
 6 They would declare any anomalies, any  
 7 emergencies to ATC, the pilots, and ATC will  
 8 duly inform RCC if there's any concern that  
 9 there's a problem. Another example is if that  
 10 aircraft is in radar contact with air traffic  
 11 control and they lose contact, and that  
 12 generally indicates that the aircraft has gone  
 13 below a radar altitude, which means he's  
 14 deviated from his flight plan. That's good  
 15 enough for the ATC services to notify air  
 16 traffic or RCC and again, we institute the  
 17 recovery action accordingly.  
 18 MS. FAGAN:  
 19 Q. So it's air traffic control is the ATC?  
 20 COLONEL DROVER:  
 21 A. Correct.  
 22 MS. FAGAN:  
 23 Q. That's what ATC is. So that's who the pilot's  
 24 talking to.  
 25 COLONEL DROVER:

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1 A. Correct.

2 MS. FAGAN:

3 Q. They lose track of the pilot or communication

4 or contact, then it's the air traffic control

5 that contacts JRCC?

6 COLONEL DROVER:

7 A. Correct. That's correct.

8 MS. FAGAN:

9 Q. We have heard that when night flights are

10 taking place, and it's very rare, according to

11 the presentations to date, but there are night

12 flights taking place when -- for some of the

13 workers travelling offshore, and one of the

14 procedures that have been put in place is that

15 before a Cougar helicopter flies passengers to

16 the oil rigs at night, Cougar Helicopters will

17 contact the 103 Squadron, which is the rescue

18 squadron in Gander, to determine the

19 availability of SAR. That's what's been

20 presented as one of the procedures put in

21 place before a night flight is taken, and are

22 you aware of this procedure, and if so, does

23 this procedure change DND's posture at 103 in

24 Gander basically?

25 COLONEL DROVER:

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1 A. It's a normal occurrence that Cougar air crew

2 would contact the folks at Gander and inform

3 them their intention of night flying, that

4 it's taking place and there's a lot of

5 communication that apparently takes place

6 between the squadron and Cougar. Whether or

7 not it changes the posture, it does not, and

8 the reason being, the -- we do not change our

9 posture depending on what Cougar's flight

10 activities are. Our SAR aircraft is based in

11 Gander and is to service the whole region.

12 The types of incidents that we talked about,

13 including maritime and land based. That is

14 the constituency, if you will. So even

15 though, if Cougar learns that the aircraft is

16 indeed in Gander, it does not necessarily mean

17 it's going to stay in Gander. So if there's a

18 SAR tasking that takes place during night

19 operations of Cougar, that aircraft may well

20 go farther away from Gander or it could go to

21 St. John's, could go anywhere, if there were

22 SAR tasking. So really, it doesn't change the

23 posture in Gander.

24 MS. FAGAN:

25 Q. Okay. So at the moment of the phone call,

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1 they'll know what the status is in Gander?

2 COLONEL DROVER:

3 A. Correct.

4 MS. FAGAN:

5 Q. But after the phone call -

6 COLONEL DROVER:

7 A. It's dependant -

8 MS. FAGAN:

9 Q. - the squadron could be tasked to a mission?

10 COLONEL DROVER:

11 A. That's correct.

12 MS. FAGAN:

13 Q. Okay. You went through, and I believe we

14 probably covered this, but just there's a

15 couple of other questions leading from it, and

16 it has to do with the medevacs off the oil

17 rigs, and as I understand it, JRCC does not

18 control or coordinate a routine medevac that

19 Cougar might conduct off an oil rig.

20 COLONEL DROVER:

21 A. That's correct.

22 MS. FAGAN:

23 Q. Okay. Could you describe the procedure when

24 JRCC asks Cougar to standby or assist in a

25 non-offshore oil emergency? Because as we

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1 know, Cougar is contracted to provide first

2 response to the oil companies and to their

3 assets. Does JRCC ever call Cougar to assist,

4 you know, leveraging those assets? Do you

5 ever try and leverage Cougar Helicopters to

6 assist in a JRCC mission that's not related to

7 the oil industry?

8 COLONEL DROVER:

9 A. Referring back to one of the slides I showed

10 where those commercial assets are in Atlantic

11 Canada, any of those commercial assets could

12 be brought into or requested to provide some

13 SAR services. This is basically done on a

14 request from RCC and is normally compensated

15 for. So in other words, we're renting or

16 contracting their services. In the case of

17 Cougar, there are -- there have been some

18 examples where Cougar may be better positioned

19 to provide a first response, not part of their

20 contracted responsibility which is for the

21 rigs, and to my awareness, there was none in

22 '09. I think in '08, we had one case where we

23 actually engaged Cougar aircraft to perform a

24 SAR mission for us.

25 MS. FAGAN:

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1 Q. Okay. So would an example be JRCC may ask  
 2 Cougar to assist with a distress, with, you  
 3 know, a call on a fishing vessel? I mean,  
 4 Cougar is not contracted by the oil companies  
 5 to help fishing vessels, but JRCC would take  
 6 that area?  
 7 COLONEL DROVER:  
 8 A. That's correct, and if a situation that you  
 9 describe, if it's one where our rescue  
 10 response would be longer than what Cougar was  
 11 able to provide, then we may make the request  
 12 to Cougar. Now they certainly have the right  
 13 to decline for a number of reasons, but we --  
 14 that's normal procedure, not only Cougar, but  
 15 to any of those commercial operators that are  
 16 out there that may be better suited to respond  
 17 to an incident.  
 18 MS. FAGAN:  
 19 Q. We have heard or at least I've heard that JRCC  
 20 can task any aircraft or any vessel, if it's  
 21 in the air or at sea, as long as safety is not  
 22 in jeopardy and there appears to be a mixed  
 23 view. Is it voluntary? Is it different if  
 24 they're in the air or at sea than if they're  
 25 in port and on a tarmac? I mean, what's your

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1 authority to task vessels?  
 2 COLONEL DROVER:  
 3 A. Yeah, it's -- what we're talking about here is  
 4 the Canadian Shipping Act, which requires  
 5 mariners to go to the aid of mariners in  
 6 distress. That's one sort of step. It also  
 7 applies to aircraft, but it's not very  
 8 applicable to aircraft because, generally  
 9 speaking, there's little that an aircraft can  
 10 render, the exception being probably a  
 11 helicopter that's conveniently located. If  
 12 the vessels are not in the immediate area,  
 13 then it's not practical that they would be  
 14 included. So it's usually focused on those  
 15 vessels that can actually get to the scene in  
 16 relatively -- faster than your SAR resources  
 17 to render assistance and that's legally  
 18 binding.  
 19 MS. FAGAN:  
 20 Q. So you could order, if there was a vessel  
 21 perhaps part of the Coast Guard Auxiliary and  
 22 they were very, very close to an emergency,  
 23 you could order that vessel to render  
 24 assistance?  
 25 COLONEL DROVER:

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1 A. That is correct.  
 2 MS. FAGAN:  
 3 Q. But if that vessel was tied up at a wharf, it  
 4 would be a voluntary request?  
 5 COLONEL DROVER:  
 6 A. Only because it's not a practical solution.  
 7 The time it could arrive on scene would not be  
 8 beneficial, because it would be more asset.  
 9 So it really is focused on those vessels that  
 10 actually can render assistance before our SAR  
 11 forces, and that -- when I say SAR forces,  
 12 that certainly includes Coast Guard  
 13 capabilities, so all Federal vessels.  
 14 MS. FAGAN:  
 15 Q. Thank you. Now the next section is reports  
 16 and returns and I understand that you do keep  
 17 and prepare a number of reports. Could you  
 18 explain what those reports -- the types of  
 19 reports that are made?  
 20 COLONEL DROVER:  
 21 A. I can, and one thing I probably didn't mention  
 22 when we were looking at the RCC centres  
 23 themselves, but the recording of conversations  
 24 and information that come over telexes and  
 25 telephones, that's all captured as part of the

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1 record. So it's all operational information  
 2 passage is recorded.  
 3 MS. FAGAN:  
 4 Q. Everything is recorded as in tape recorded?  
 5 COLONEL DROVER:  
 6 A. Tape recorded if it's voice and data recorded  
 7 for the -- and they're archived and kept for  
 8 whatever legal time frame they're required.  
 9 There are a series of reports that are  
 10 included. Every time we have a SAR incident,  
 11 they start a SAR case file and they maintain a  
 12 log. So that really is the order of all the  
 13 communications, the vessels tasked, the  
 14 information reporting that those had achieved.  
 15 And if the -- if you have open cases, we do  
 16 Sit Reps, situation reports, and those are  
 17 usually on a daily basis, and those are  
 18 basically updates, what has transpired, the  
 19 plan for the ensuing hours.  
 20 When an aircraft goes missing, there's a  
 21 missing aircraft notification and these are  
 22 part of the pre-flight requirements is to  
 23 check those types of messages. So it alerts  
 24 all the operators in that area that there's an  
 25 overdue and a missing aircraft. So if they



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1 hear an emergency beacon on their radios, they  
 2 can report that. So it's another report  
 3 that's out there.  
 4 Briefing task form, so it's just a  
 5 capture of when the RCC tasks an agency. They  
 6 just capture when it happened, what they were  
 7 tasked to do as part of their record keeping.  
 8 SAR mission reports, this is at the  
 9 squadron level where if an aircraft was tasked  
 10 for a SAR mission, they used SAR equipment,  
 11 deployed their SAR techs, we'd write a report  
 12 on that, and daily sums. So each day, for  
 13 instance, I see all the SAR activity in the  
 14 whole country and so some days there are none.  
 15 Yesterday, there was one. Four days ago,  
 16 there were four. So those are the daily  
 17 summaries.  
 18 And the one I didn't mention, but there  
 19 have been some specific questions, so I'll  
 20 address it separately. It's a SAR operations  
 21 report. This is not a required report under  
 22 most circumstances for all those incidents  
 23 that are reported, the 8,000 across the  
 24 nation. There are not 8,000 SAR operation  
 25 reports. They're by exception as opposed to

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1 an expected report at the end of a SAR case,  
 2 if you will.  
 3 Normally if a SAR operation extends  
 4 beyond four days, it requires a SAR report,  
 5 operations report. If the commander assesses  
 6 it as sensitive in some area, either anomalies  
 7 took place during the SAR operation that need  
 8 to be captured and reported, he can order one  
 9 up, or indeed any special cases can be  
 10 directed by any level of chain in NDHQ to ask  
 11 for a report. The report itself captures the  
 12 incident, how it was responded and all the  
 13 resources that were applied to it, and it's  
 14 really focused and the whole purpose is if  
 15 there were some anomalies, some difficulties,  
 16 some challenges, some procedures that didn't  
 17 work as expected or could be improved on or  
 18 reported, it's to capture those so that we can  
 19 derive some changes, lessons learned, those  
 20 sorts of things. Also, it can be served to  
 21 use the investigation board, the information  
 22 collected in these reports to assist in an  
 23 investigation and subsequent their  
 24 investigation.  
 25 MS. FAGAN:

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1 Q. When Mr. Harris spoke to the Inquiry, he  
 2 tendered a Search and Rescue Operations report  
 3 for the maritime incident which involved the  
 4 fishing vessel, "Acadian II" and it was an  
 5 incident over March 28th and March 29th.  
 6 Would that be an example of a SAR Ops report?  
 7 COLONEL DROVER:  
 8 A. Yes, it would.  
 9 MS. FAGAN:  
 10 Q. Okay, and was a SAR Ops Report prepared after  
 11 Flight 491 on March 12th, 2009?  
 12 COLONEL DROVER:  
 13 A. No, there was not.  
 14 MS. FAGAN:  
 15 Q. And why wasn't a SAR Ops Report prepared for  
 16 that incident?  
 17 COLONEL DROVER:  
 18 A. Essentially it was shorter than 4 days, for  
 19 sure, but if you look at that operation from a  
 20 SAR response perspective, actually it was a  
 21 response that was part of expected planned  
 22 execution. There are no difficulties from a  
 23 SAR perspective in how that mission was  
 24 conducted, so there was really no need to go  
 25 and do an Ops report.

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1 MS. FAGAN:  
 2 Q. Now you said that you would give us a break  
 3 down of the rhythm of how a SAR crew would  
 4 function for a mission and I believe that's  
 5 what's in your next few slides, so unless you  
 6 have further comment on the reports, the  
 7 reporting aspect, I'd ask you to move into  
 8 this section.  
 9 COLONEL DROVER:  
 10 A. Okay. Thank you, I have, again, this is sort  
 11 of some of the activities that you will see  
 12 take place during the launch and that timeline  
 13 that I briefed on in an operation, a SAR  
 14 operation. There's a lot of words in the next  
 15 few slides and I'll go through briefly or  
 16 quickly because I think we sort of touched on  
 17 the highlights here. First of all, let me  
 18 just explain life on the squadron, if you  
 19 will, so you always got a crew on SAR standby  
 20 duty and always a crew waiting to come on  
 21 duty, so today the crew that stands down at  
 22 4:00, they hand off the pager to the 4:00  
 23 crew, so it's a continuous operation, it's no  
 24 different than any sort of 24 and 7 manned  
 25 operation. The crews that rest at home

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1 actually can be tasked any time they hold that  
 2 responsibility. They are rested, fresh, a  
 3 crew day--and we have limitations as to the  
 4 number of hours you can operate an aircraft  
 5 safely essentially is what a crew day really  
 6 amounts to, and whenever they are tasked, they  
 7 would sort of be expected to be able to  
 8 perform 15 to 18 hours crew day, depending if  
 9 they got autopilot and things. A crew that's  
 10 been on duty for a period of time, that's  
 11 obviously eating into their 18 hours of duty  
 12 capability, so not just one dynamic because  
 13 there are some considerations for how many  
 14 duty hours you can be "on the job" before you  
 15 have to rest and that's just a safety logical  
 16 sort of requirement. So normally our shifts  
 17 are eight hours long and talked about if they  
 18 get launched during that period of time.  
 19 Occasionally we will get a mission that will  
 20 take the helicopter to the far north, which is  
 21 a good day's flying. What we may have to do  
 22 in some incidences, actually take another  
 23 fresh crew, which is probably the one that's  
 24 at rest waiting to come to work, and fly them  
 25 in a Herc where this aircraft is recovered

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1 in the north, so they continue to use a  
 2 helicopter to continue the rescue operations,  
 3 so it's kind of staging a crew. It doesn't  
 4 often happen, but again it's one of the  
 5 capabilities that our system has to be able to  
 6 modify the posture, if you will, to be able to  
 7 continue to deploy that helicopter to render  
 8 that search and rescue assistance. Always at  
 9 the squadron, the focus is on making sure that  
 10 the aircraft is fully mission capable and  
 11 ready for flight, as we discussed earlier, and  
 12 there's a constant requirement, of course, of  
 13 having enough trained crews on your squadron  
 14 to be able to sustain an intense search  
 15 operation as well.  
 16 The notification, we talked about that  
 17 timeline chart, come from a variety of  
 18 sources. RCC really is the data central,  
 19 those agencies now are getting as much  
 20 information as they can about where the  
 21 occurrence may take place. What they did, the  
 22 first initial step before they even get  
 23 seriously collecting data is task the  
 24 squadron, so if it's Gander we're talking  
 25 about, they just pick up the Hot Line and tell

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1 Gander that they have a mission and what they  
 2 have to do is provide Gander with as much  
 3 information that they have on this mission, so  
 4 that the crews on the ground can start mission  
 5 planning. Now we're talking minutes here, we  
 6 said if they could get airborne in 20 minutes.  
 7 They don't have a long time. This is a cold  
 8 start. The crew in Gander have no idea what  
 9 they're up against because they don't know  
 10 what the nature of the incident is, so as much  
 11 information that the JRCC can provide will go  
 12 into the planning for this mission. Things,  
 13 like the number of people involved that may  
 14 not necessarily be known, so is it large  
 15 numbers, is it small numbers, they'll  
 16 certainly know if it's over water, over land.  
 17 That will determine the types of equipment  
 18 they may wish to add to their aircraft or may  
 19 wish to take off the aircraft, as far as that  
 20 goes. So they continue into the planning  
 21 cycle before they're airborne. Weather  
 22 becomes a very critical factor, so they have  
 23 crew responsibility, so while a pilot may be  
 24 talking to RCC and getting the mission  
 25 briefing, the co-pilot is talking to weather

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1 services and finding out what he's expecting  
 2 en route, how to flight plan and where the  
 3 suitable airports are and the alternative  
 4 airports they have to go, weather refuelling  
 5 options and the ultimate destination. So they  
 6 can make some final decision on what to put on  
 7 the aircraft that's not standard equipment and  
 8 sometimes that one will change, sometimes  
 9 they'll be fine to go. We talked about Blue  
 10 Forces, that a military term for those other  
 11 assets that may be tasked for the Search and  
 12 Rescue or may be close by in the proximity.  
 13 For instance, the oil rig could very well be  
 14 in that category because if they had a mission  
 15 that's south of the oil rigs, that could be a  
 16 refuelling stop. If it were, I'll inject  
 17 here, if that becomes a refuelling stop  
 18 option, RCC will do the communication with the  
 19 oil rig to clear the deck and get approval for  
 20 using the deck for refuelling operation. So  
 21 the crew don't have to do that, that's where  
 22 the RCC--basically while the crew is  
 23 scrambling around getting the aircraft ready  
 24 for flight, the RCC are doing all those other  
 25 co-ordinating. If there's a requirement to

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1 refuel en route, so if they're going to  
 2 Labrador and they got to stop at St. Anthony  
 3 for fuel, the RCC will wake up the refueller,  
 4 if he's not on duty, and get him at the  
 5 airport so when the helicopter arrives there,  
 6 the fuel is there. So that's kind of the co-  
 7 ordination that takes place between the RCC  
 8 and the squadron. Put in a flight plan, get  
 9 on their gear and again, if it's over water,  
 10 it's emersion suits. They do a night vision  
 11 goggles check out and they get airborne.

12 MS. FAGAN:  
 13 Q. Now it says here that air traffic control  
 14 requires 30 minutes notice. If you're in the  
 15 air in 25 minutes, I guess the air traffic  
 16 controller takes shorter notice?

17 COLONEL DROVER:  
 18 A. Absolutely.

19 MS. FAGAN:  
 20 Q. There must be an exception.

21 COLONEL DROVER:  
 22 A. Absolutely, yeah. Normally in flight  
 23 planning, if you're going to submit a flight  
 24 plan, it's 30 minutes before flight because  
 25 that goes into their central agency, so when

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1 you get in your aircraft, this is for when  
 2 you're flying in clouds. If the VFR, visual,  
 3 then you don't need this 30 minute activity,  
 4 but normally it's 30 minutes, so that when you  
 5 get in the aircraft, your clearance is  
 6 processed and it's given to you. If they put  
 7 in a flight plan for a rescue call sign, which  
 8 our call signs are identified if it's a  
 9 rescue, that means they're on an operational  
 10 mission, it's an expedited process, so as  
 11 quickly as the flight plan goes in, it gets  
 12 ahead of the queue. It's not going to be  
 13 delayed at air traffic control.

14 MS. FAGAN:  
 15 Q. Air traffic control won't hold you up.

16 COLONEL DROVER:  
 17 A. Definitely not, they are part of the whole  
 18 network that provides that response, so they  
 19 are fully conversant with the requirements of  
 20 SAR. Okay, so en route, again, it's basically  
 21 a, I guess the next slide would help. Up date  
 22 while they're flying en route of any  
 23 additional information, the things they don't  
 24 have, I mentioned earlier that they would, if  
 25 we had a top cover in the form of a Hercules

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1 or something, the RCC would give the contact  
 2 frequencies, the helicopter would contact the  
 3 Hercules and do the vectors to the scene, so  
 4 all this information is passed now between the  
 5 scene commander, RCC and the helicopter that's  
 6 dispatched. And basically en route we, if  
 7 it's a known detailed event where we know the  
 8 SAR techs are going to have to dive or have to  
 9 at least be hoisted into the water, they would  
 10 start dressing for those and starting changing  
 11 out the kit, so en route the SAR techs are  
 12 actually in a preparation stage so that when  
 13 they arrive on scene, they're prepared and  
 14 suited and checked, ready to go. So when they  
 15 get on scene, again it is situation dependant,  
 16 depending on the weather, is it day, night,  
 17 what kind of sea state are we dealing with,  
 18 are there people in the water, is it a vessel  
 19 that's taking on water, is a pump required,  
 20 all these are scenario driven and here's where  
 21 a capability of a SAR crew and the capability  
 22 of the aircraft and the equipment that is  
 23 aboard that aircraft are factored in and  
 24 whatever the required solution is, they would  
 25 figure it out and make a plan to either insert

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1 the SAR techs or do the hoist and that sort of  
 2 thing. Constantly aware, of course,  
 3 helicopter has limited fuel, they all do, so  
 4 all this has to be managed, fuel managed, if  
 5 you will, so that they have sufficient time at  
 6 the scene to provide that rescue capability  
 7 and then recover safely somewhere. It does  
 8 not necessarily have to be to a medical  
 9 facility, maybe there's nobody injured, maybe  
 10 they're just abandoning ship scenario, but  
 11 paramount in all this sort of execution phase  
 12 is a constant awareness of the limitations and  
 13 the need for a safe destination. And again,  
 14 that could be an oil rig option. And the  
 15 inbound, once the sort of rescue has been  
 16 effected, and you get casualties aboard the  
 17 aircraft, the co-ordination doesn't stop  
 18 there, RCC are now busy dealing with, making  
 19 sure the facilities are available at the  
 20 recovery point and if it's a hospital, having  
 21 those hospital forces alerted so that there is  
 22 an ambulance to meet the aircraft and whatever  
 23 else is required. And then from there, it's  
 24 to reconstitute the aircraft. So it's either-  
 25 -sometimes it may be at a crew day and they

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1 would sort of stay where, if it's not at their  
 2 home base, rest overnight, bring up another  
 3 crew at home plate or they may return to their  
 4 destination. What does take place at the  
 5 squadron when a helicopter is launched,  
 6 especially for an extended mission, they will  
 7 endeavour to get another aircraft on status  
 8 and use the next crew that are coming on duty  
 9 to pick up a standby posture, so it's not part  
 10 of the requirement to have more than one SAR  
 11 crew in operations, one in the standby status,  
 12 but every effort is made to do that and that  
 13 works out pretty well.

14 MS. FAGAN:  
 15 Q. Now I know that we're almost finished the  
 16 slides, however, there's a few items that are  
 17 going to be covered beyond the slide  
 18 presentation as well as the video, so we have  
 19 a bit more--it doesn't look like it, by  
 20 looking at the couple of pages that are left,  
 21 but there is a bit more to do, so if we could  
 22 take a break.

23 COMMISSIONER:  
 24 Q. We'll take our break now.  
 25 (RECESS)

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1 MS. FAGAN:  
 2 Q. Now Colonel Drover, are you finished with your  
 3 description? Because you were at mission  
 4 complete, so if you're completed with that,  
 5 we'll take you to the last slide and I know  
 6 the last slide says "conclusion", but we do  
 7 have the video and a few questions, so you  
 8 could go through this slide, then I have some  
 9 other questions for you.

10 COLONEL DROVER:  
 11 A. Okay, so to sum up where we've taken the  
 12 presentation is basically speaking the various  
 13 inputs, if you will, into the SAR dynamic that  
 14 speaks to a responsible and prepared public  
 15 and sufficient and capable resources, public,  
 16 private and commercial to respond if and when  
 17 a SAR operation is required. So, that takes  
 18 us to -

19 MS. FAGAN:  
 20 Q. Questions.

21 COLONEL DROVER:  
 22 A. Questions.

23 MS. FAGAN:  
 24 Q. Although this Inquiry is now investigating the  
 25 March 12th incident, JRCC was involved in co-

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1 ordinating that effort and I would ask you to  
 2 take us through that particular effort and  
 3 that incident. Now, I'm not looking for a  
 4 minute by minute, second by second  
 5 description. You've given us a lot of  
 6 information on how JRCC works, can you take  
 7 that and apply it in a general sense to what  
 8 occurred on March 12th and then what resources  
 9 were brought to assist in that rescue?

10 COLONEL DROVER:  
 11 A. I can and I'll just hit the, sort of  
 12 highlights of the major activities, bearing in  
 13 mind, as I described the activities in the  
 14 RCC, a lot of people were busy that day to co-  
 15 ordinate the various elements that constituted  
 16 the SAR response. And the incident was  
 17 recorded and reported that, I'll use a  
 18 timeline here that may be helpful, it's 12-18,  
 19 that would be Zulu, and NAV Can actually  
 20 notified the JRCC that Cougar declared a  
 21 mayday.

22 MS. FAGAN:  
 23 Q. Okay, now just--I know we're going to keep  
 24 going, you said Zulu, Zulu is universal time  
 25 coordinate and would that be two hours, about

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1 10:00? Because we're in Halifax.

2 COLONEL DROVER:  
 3 A. Right, it was three hours, I believe.

4 MS. FAGAN:  
 5 Q. Three hours, but somewhere -

6 COLONEL DROVER:  
 7 A. Yeah.

8 MS. FAGAN:  
 9 Q. Well, if somebody is listening to this and  
 10 they hear 12 noon -

11 COLONEL DROVER:  
 12 A. No, it was earlier than that, it was about 9,  
 13 right.

14 MS. FAGAN:  
 15 Q. So these times start at 12 and go on, but  
 16 that's not Halifax local time and Newfoundland  
 17 -

18 COLONEL DROVER:  
 19 A. I understand, it's a.m. in the morning of--but  
 20 as I mentioned not surprisingly when Cougar  
 21 first detected they had a problem, it was  
 22 reported through ATC and ATC immediately  
 23 passed that on to JRCC.

24 MS. FAGAN:  
 25 Q. So it was Air Traffic Control?

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1 COLONEL DROVER:  
 2 A. Correct.  
 3 MS. FAGAN:  
 4 Q. Okay.  
 5 COLONEL DROVER:  
 6 A. And if the initial steps in the centre, this  
 7 is where the Maritime Communication and  
 8 Traffic Service, which are sort of co-located  
 9 here in St. John's and other stations along  
 10 the way, start putting up broadcasts so they  
 11 advise everybody in that particular area that  
 12 there's something happening and as much detail  
 13 as they had. So the general broadcast--and  
 14 this actually was the initial step into  
 15 mustering the service forces that were at  
 16 play, both Coast Guard and the other ships  
 17 that were involved that there was an incident  
 18 that's occurring in that general area. And  
 19 actually they had the area fairly well  
 20 located, so some good information very, very  
 21 quickly which actually started the operation.  
 22 As well, JRCC got contacted by the Cougar  
 23 operation centre and when they got it from  
 24 their aircraft, the information, they passed  
 25 that on to JRCC. So we have two points where

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1 JRCC were initially notified at approximately  
 2 the same time, and that's good, that sort of,  
 3 I think, speaks to the JRCC being the  
 4 receptors, if you will, of any type of alert  
 5 from any source, and it's also confirmation,  
 6 obviously, that something serious has  
 7 occurred. Once the JRCC establish that in  
 8 actual fact they have an incident in the  
 9 making, two minutes later they task the Coast  
 10 Guard and Canadian Forces aircraft. Initially  
 11 for Military, there was two Hercules aircraft  
 12 tasked and four Cormorants, which is far in  
 13 excess of what normally is on standby posture,  
 14 but those resources were available and wasn't  
 15 airborne on an exercise, so they were  
 16 available for immediate dispatch so the rescue  
 17 co-ordinating centre activated all of them.  
 18 At 12:30 JRCC was advised that Speed Air was  
 19 departing for Gander out of St. John's and  
 20 that's King Air by PAL and they were tasked to  
 21 go to the incident site, at which they  
 22 complied with and they did and at 12:32, so  
 23 just a little while after that, the RCC  
 24 learned that there was an Aurora operating  
 25 over water on a military mission and it tasked

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1 them. And that goes back to your question  
 2 earlier today, do they know where military  
 3 aircraft are, so obviously within two minutes  
 4 they had that information, so very quick  
 5 recognition that there was other aircraft  
 6 available and they were tasked as well.  
 7 MS. FAGAN:  
 8 Q. So at this point, we would have an Aurora, a  
 9 Speed Air, four Cormorants and two Hercules,  
 10 did you say?  
 11 COLONEL DROVER:  
 12 A. Two Hercules, four Cormorants and I haven't  
 13 introduced the Cougar because they had their  
 14 own response at this stage, and the aircraft,  
 15 the Speed Air and the Aurora. And I don't, I  
 16 won't speak to the coastal vessels that were  
 17 responding at the same time, so there are a  
 18 number of vessels that were called to service  
 19 as well, so this was a fairly robust response.  
 20 The Speed Air got on scene, so that was the  
 21 first aircraft on scene and they reported to  
 22 JRCC and they had now reported what they saw  
 23 which is a small area, search area well  
 24 defined and so they were definitely over the  
 25 site of the incident, so now they had a fix on

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1 where the incident occurred and Speed Air gave  
 2 some initial reporting of what was evident at  
 3 the scene. And at the time 12:55 Cougar  
 4 Helicopter, 61 was his call sign, reported  
 5 that he was 15 minutes back. So it was the  
 6 first Cougar dispatched from St. John's that  
 7 was closing in on the incident site. At  
 8 13:20, the Aurora arrived on scene, so  
 9 approximately an hour after occurrence, we  
 10 have the first military aircraft on scene and  
 11 it took over on-scene commander duties. So  
 12 now it was, as I described earlier, working  
 13 with JRCC and tasking, essentially co-  
 14 ordinating the activities of all the aircraft  
 15 that arrived on the scene.  
 16 MS. FAGAN:  
 17 Q. Okay, so just--I can see people ferociously  
 18 taking notes here, so just to -  
 19 COLONEL DROVER:  
 20 A. Slow down.  
 21 MS. FAGAN:  
 22 Q. Well, slow down a little bit, but perhaps you  
 23 can recap. Now when the Aurora is no scene or  
 24 on top and the on-scene commander, Speed Air  
 25 is there, is that correct?

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1 COLONEL DROVER:  
 2 A. Correct.  
 3 MS. FAGAN:  
 4 Q. Has anything else arrived? We know there's  
 5 two Hercs, four Cormorants and Cougar  
 6 helicopters en route.  
 7 COLONEL DROVER:  
 8 A. Correct.  
 9 MS. FAGAN:  
 10 Q. So the second aircraft would be the Aurora?  
 11 COLONEL DROVER:  
 12 A. Correct.  
 13 MS. FAGAN:  
 14 Q. Okay. So now, take us through what happens.  
 15 We got Speed Air and the Aurora. What happens  
 16 next?  
 17 COLONEL DROVER:  
 18 A. So the next and significant event, helicopter  
 19 to arrive on scene at 13:25 is Cougar 61 call  
 20 sign and they arrive on scene and that was the  
 21 aircraft that actually did the ultimate rescue  
 22 and returned to St. John's. About 15 minutes  
 23 later, 13:34, the first Hercules arrived on  
 24 the scene. They, at that juncture, took over  
 25 on-scene commander duties, not that the Aurora

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1 was not qualified to do that, but the Herc is  
 2 a SAR aircraft and probably a little bit more  
 3 familiar with SAR procedures, and the Aurora  
 4 did stay on scene for a while, but the Herc so  
 5 is now the first SAR aircraft, first military  
 6 SAR aircraft that was at the scene. And at  
 7 13:40, a second Cougar helicopter, call sign  
 8 62, arrived on scene.  
 9 So we had helos that are working actually  
 10 around the incident site and we had top cover  
 11 in the form of a Hercules and an Aurora. At  
 12 some point, and I don't have the time, the  
 13 Speed Air aircraft, the first one on scene,  
 14 was released. There was no other need for  
 15 that aircraft to be employed. There's nothing  
 16 that he could provide that wasn't available  
 17 through our fixed wing aircraft.  
 18 MS. FAGAN:  
 19 Q. So would it be the on-scene commander who  
 20 would make the decision or release the Speed  
 21 Air?  
 22 COLONEL DROVER:  
 23 A. Yes, absolutely.  
 24 MS. FAGAN:  
 25 Q. Okay.

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1 COLONEL DROVER:  
 2 A. Okay, and at 14:20, a second Hercules aircraft  
 3 arrived on scene. So now we have our two  
 4 Hercules on scene, and at 14:25, a significant  
 5 time, there's a lot of things that take place  
 6 between these but these are the significant  
 7 events, that Cougar departs for St. John's.  
 8 MS. FAGAN:  
 9 Q. So 14:20?  
 10 COLONEL DROVER:  
 11 A. 25.  
 12 MS. FAGAN:  
 13 Q. 25, so that would be the Cougar 61?  
 14 COLONEL DROVER:  
 15 A. Correct.  
 16 MS. FAGAN:  
 17 Q. The first Cougar that arrived which did  
 18 retrieve Mr. Decker, that would be the time it  
 19 left the scene?  
 20 COLONEL DROVER:  
 21 A. That's correct.  
 22 MS. FAGAN:  
 23 Q. Okay, and finally at 14:28, both Cormorants,  
 24 our first two Cormorants arrived on scene. So  
 25 that was two hours after the initial incident

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1 that we had at least two of our SAR aircraft  
 2 and two of our Hercules. So we had four  
 3 primary SAR aircraft on scene at that  
 4 juncture. That's as far as I've taken the  
 5 extract from the log, and I probably can't  
 6 give you too much more detail on the incident  
 7 itself, from what I have available at this  
 8 time. Does that answer your question?  
 9 MS. FAGAN:  
 10 Q. So yes, and without the precise time, you did  
 11 mention that there were four Cormorants. Did  
 12 the other -- do you know if the other two did  
 13 arrive on the scene, and eventually, it would  
 14 have been the on-scene commander who released  
 15 all of the aircraft? Because we have the  
 16 Cougar 61 has returned to St. John's with the  
 17 survivor.  
 18 COLONEL DROVER:  
 19 A. Correct.  
 20 MS. FAGAN:  
 21 Q. The Cougar 62 would be on scene and two  
 22 Cormorants on scene and two Hercs. So there  
 23 would be two more Cormorants and they would  
 24 have just continued with the rescue?  
 25 COLONEL DROVER:

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1 A. That's right, and actually -- exactly. What  
 2 took place in the pursuing hours was a stagger  
 3 where aircraft would return to base, to  
 4 Cougar's, for fuel and be replaced by. So we  
 5 had four in the flow, so to speak. Weather  
 6 became a factor for a portion of time where  
 7 portions of the potential search area were  
 8 really not workable by helicopter. At the  
 9 same time, we had the Coast Guard vessels in  
 10 the area that were doing sort of localized  
 11 sweeps as well. So the idea, after the  
 12 incident site was located of course, is to  
 13 ensure that no life rafts were out of the  
 14 search area unaccounted for and any other sort  
 15 of activity, and it was well -- once the  
 16 initial response and Cougar got on scene, the  
 17 site was worked, if you will, with military  
 18 aircraft until the case was suspended.

19 MS. FAGAN:  
 20 Q. Okay. Now do you know if there's been any  
 21 assessments done of the Canadian Search and  
 22 Rescue program or our program -- you've just  
 23 discussed what the Department of Defence does  
 24 and do you know if there's been any  
 25 comparisons or assessments? I mean, how do we

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1 stand up on the international stage? How  
 2 would we compare, as a Canadian search and  
 3 rescue, to the other parts of the world?

4 COLONEL DROVER:  
 5 A. Again, as a signatory to some of those  
 6 conventions that I mentioned earlier, we  
 7 maintain certain obligations in the provision  
 8 of SAR, including our search and rescue  
 9 centres. So we do participate and we maintain  
 10 the same standards as other cooperating and  
 11 participating nations and SAR delivery in  
 12 general. There was a report done in 2008 by  
 13 our internal auditing review services within  
 14 our department and it did explore a little bit  
 15 of what other nations' programs entail, and  
 16 they did report that our system, including the  
 17 search and rescue coordinating centres, stands  
 18 up as a model in many nations' programs. So  
 19 it's a highly respected structure that we have  
 20 in place and very robust.

21 As I say, as I said earlier, it's  
 22 difficult to compare our capabilities and our  
 23 program with any other nation because each  
 24 nation has unique requirements for their  
 25 search and rescue, but it is, it's known as a

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1 quality, capable program.

2 MS. FAGAN:  
 3 Q. Now you have a short video which you said may  
 4 give us an idea of hoisting and some of the  
 5 missions that are conducted in more realistic  
 6 weather conditions, and even on March 12th,  
 7 you mentioned that weather was a factor once  
 8 they were into the mission.

9 COLONEL DROVER:  
 10 A. Right, yeah, this -

11 MS. FAGAN:  
 12 Q. So could you explain a little bit about this  
 13 video, what we can see?

14 COLONEL DROVER:  
 15 A. Yeah, it's just a sequence of SAR sort of  
 16 events that you might encounter. Again, it's  
 17 not real operations. It's just a training  
 18 exercise, I believe, although there's some  
 19 challenging weather conditions and a short run  
 20 and if you can run the film there and I can  
 21 talk to you after to answer any questions, if  
 22 there are.

23 MS. FAGAN:  
 24 Q. Okay. Well, we'll play it and then we can  
 25 have a discussion. It's only a minute.

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1 (VIDEO PLAYED)

2 COLONEL DROVER:  
 3 A. It's my recruitment teaser for SAR techs.  
 4 Anybody who wishes some information on how  
 5 they can join the team, I'd be more than  
 6 pleased to assist.

7 MS. FAGAN:  
 8 Q. Is there -- that's all the questions that I  
 9 have. Is there anything else that you would  
 10 like to say? Now the lawyers that are here  
 11 for the parties with standing, a number of  
 12 them are going to want to ask some questions,  
 13 but before we move to that, do you have  
 14 anything else that you'd like to say?

15 COLONEL DROVER:  
 16 A. No. I thank you for the opportunity to allow  
 17 me to present, in some kind of a organized  
 18 fashion, the national SAR program. I think  
 19 it's important to understand the various  
 20 responsibilities and inputs and there are a  
 21 lot of equities, a lot of organizations that  
 22 contribute to, I think, what we have in place,  
 23 which is a very capable SAR force. So I'm  
 24 looking forward to the question period and if  
 25 there's -- if I left questions unanswered, I'm

1 sure I'll get an opportunity to answer those  
 2 questions in the next little while.  
 3 MS. FAGAN:  
 4 Q. Commissioner, a number of counsel have  
 5 indicated during the break that Colonel  
 6 Drover's presentation has been very  
 7 informative and there's an awful lot of  
 8 information here, and if it is acceptable,  
 9 they would prefer to start the questioning  
 10 tomorrow morning, after they've had a chance  
 11 to organize their thoughts and review all the  
 12 information. It would likely flow in a little  
 13 more structured way tomorrow.  
 14 COMMISSIONER:  
 15 Q. Well, I'm not surprised. It has been a --  
 16 there has been a lot of information, and I  
 17 must say, Colonel Drover, I thank you for it,  
 18 because it gives me a much better idea how a  
 19 search and rescue operation works, and what is  
 20 behind the operation to make it possible, and  
 21 that's valuable. So thank you.  
 22 Yes, if that's the feeling, I certainly  
 23 have no objection and we'd start then tomorrow  
 24 morning at 9:30.  
 25 MS. FAGAN:

1 CERTIFICATE  
 2 We, the undersigned, do hereby certify that  
 3 the foregoing is a true and correct transcript of a  
 4 hearing heard on the 27th day of January, 2010 at  
 5 Tara Place, 31 Peet Street, Suite 213, St. John's  
 6 Newfoundland and Labrador and was transcribed by us  
 7 to the best of our ability by means of a sound  
 8 apparatus.  
 9 Dated at St. John's, NL this  
 10 27th day of January, 2010  
 11 Cindy Sooley  
 12 Discoveries Unlimited Inc.  
 13 Judy Moss  
 14 Discoveries Unlimited Inc.

1 Q. Thank you.  
 2 COMMISSIONER:  
 3 Q. Thank you.  
 4 ADJOURNED AT 4:00 P.M.



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