OFFSHORE HELICOPTER SAFETY INQUIRY
January 27, 2010
Tara Place, Suite 213, 31 Peet Street
St. John's, NL

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PRESENT:

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..... agent on behalf of Douglas A. Latto for Lanouette Estate (Co-pilot)

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.....Department of National Defence

Major Robert Stoney ..... Office of the Judge Advocate General for the Canadian
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COMMISSIONER:

Q. Good morning, ladies and gentlemen. First I would like to welcome Colonel Drover from the Canadian Forces. He is stationed in Ottawa, and also to welcome Major Stoney, who is with him, he's from the Office of the Judge Advocate General, and, of course, Mr. Tarlton, as counsel, who we see from time to time. Just a brief word at the outset of this. The purpose of our asking Canadian Forces to send someone who is knowledgeable and expert in matters of Search and Rescue is so that the Commission can have an understanding of what DND Canadian Forces do, the equipment they use, their national mandate, and everything about what they do, because that would be of value to this Inquiry in determining what recommendations may be made to the Offshore Petroleum Board, C-NLOPB, in terms of their regulation of the oil companies usually referred to as the oil operators, and their contractee, who is Cougar, which provides what I refer to as first response here in St. John's. So that is the framework in which I

regard the appearance of someone; namely, the Colonel, Colonel Drover, and the purpose of his being here, and if necessary, I can elaborate on that later. So, Ms. Fagan, are you read?

MS. FAGAN:

Q. Yes.

COMMISSIONER:

Q. Ready, Colonel. Thank you, okay then.

MS. FAGAN:

Q. Commissioner, as you've just stated, Colonel Drover is the witness for the Department of National Defence, and Mr. Drover is the Director of Air Force Readiness, Chief of Air Staff. The focus, as you've said, will be on the mandate and procedures of the Joint Rescue Coordination Centres, and in particular, the centre located in Halifax. Colonel Drover will give us an overview and historical context, and we will eventually narrow the focus down to the Halifax and the east coast operations. As stated before, this phase of the Inquiry is data collection phase where the Inquiry seeks to obtain information on the current situation with respect to helicopter transportation of

workers to the offshore. The Canadian Forces of DND provide SAR to the east coast of Canada, and Colonel Drover has agreed to explain what the Canadian Forces provides in the way of SAR. Next week we will hear from Cougar Helicopters on what they provide in search and rescue and first response services. The terms of reference prohibit the Inquiry from investigating the location of the Department of Defence's resources and we will not be dealing with this issue. So I'd ask that Colonel Drover be sworn, and then we're going to enter the exhibits.

COMMISSIONER:

Q. Thank you.

COLONEL PAUL DROVER (SWORN) EXAMINATION BY MS. ANN FAGAN:

MS. FAGAN:

Q. Thank you, Colonel Drover. Colonel Drover has been good enough to prepare a PowerPoint in discussions and meetings with myself and his counsel, and we'd like to have the Powerpoint entered as Exhibit 154. Colonel Drover has also provided a list of abbreviations and acronyms because as all the other witnesses have brought in their abbreviations and

acronyms, the Canadian Forces has its own specialized language, and that is Exhibit 185. In addition, there are two short videos, Exhibit 184 and 186. One video is approximately four to five minutes. We'll be playing that at the beginning, and the other video is about a minute, a minute and a half, and that will be played at the end. So if we could have those four exhibits entered, we can then make them available for the public.

COMMISSIONER:

Q. Yes, they will be entered.

MS. FAGAN:

Q. Colonel Drover, before we begin your presentation and play the video, could you please provide us with some background information on your career and experience? I've read your bio and I understand you've been the Director of Air Force Readiness since October of 2007, but I'm sure there was an awful lot of experience to get you there. So could you go through that and that would give the group a context for when they ask their questions?

COLONEL DROVER:

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

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

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Disaster Plan that Canadian Forces maintains. After that project was complete, I joined the Air Force Staff in my current position, and among other responsibilities, I'm responsible for SAR policy, ministerial support liaison with other agencies, I particulate in ICSAR which is an interdepartmental organization which I'll brief on a little later, and I'm also a member of the Arctic Council SAR Task Force.

MS. FAGAN:

Q. And I don't want to say that's it.

COLONEL DROVER:

A. That's the SAR relation, at least.

MS. FAGAN:

Q. That's your SAR experience, and I asked you to focus on that and I appreciate it. I understand you have some opening remarks and then we're going to ask the technician and registrar to play the video. So could you provide your opening remarks?

COLONEL DROVER:

A. Yes, ma'am. Mr. Commissioner, thank you very much for the opportunity to appear today before the Inquiry on behalf of the Department

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

MS. FAGAN:

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Q. Okay. Could you just explain a little bit about the video before we actually hit the play button?

COLONEL DROVER:

A. There's two segments. The first segment is an initial explanation of our Search and Rescue Satellite Based Beacon System. Again it's important later when I discuss this. It'll give you just a little graphic, how it works, and the remaining is just a series of SAR clips of our team in action, so to speak, and it's sort of self-explanatory in that regard, so over to you.

MS. FAGAN:

Q. Okay. So that's Exhibit 184.

(VIDEO PLAYED)

Getting to an incident quickly can make the difference between life and death of victims. One key tool that minimizes search time is an international satellite alerting system called COSPAS/SARSAT. COSPAS/SARSAT satellites act as a moving high altitude space antenna picking up distress beacon signals and relaying these signals back to earth. Earth stations then calculate the location of the

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signal and forward that information to Search and Rescue authorities at the Canadian Mission Control Centre, or CMCC, also located in Trenton. Search and Rescue forces have used the information provided by the COSPAS/SARSAT satellite system to respond to approximately 8 to 12 percent of all SAR incidents in Canada.

(VIDEO ENDED)

MS. FAGAN:

Q. Thank you for bringing in that video, and as we go through your presentation, you may refer to the odd picture or the odd activity that we've seen in the video, at least it gives us a visual, and I now ask that the PowerPoint presentation be brought up and we'll get into the detail. That's Exhibit 154. As I understand it, Colonel, you have broken your presentation to four sections, and the first is the historical context. So I'd ask you to take us through those slides.

COLONEL DROVER:

A. Okay, thank you. Just one comment on the video, obviously it was a training video. It did sort of show some of the sequences, some

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

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

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

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

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

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

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

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

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

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the Interdepartmental Committee on Search and Rescue, which I've already discussed, and the second one is the National SAR Secretariat, independent body outside the lines of authority of SAR delivery, coordinates, promotes, and reviews the national SAR program.

MS. FAGAN:

Q. We heard evidence earlier, a presentation, and there was a slide and PowerPoint put forward by the joint oil operators, and I know you've had the opportunity to review the presentations, and in that presentation it appeared that the National Secretariat was in the direct line of reporting, and actually between all of these groups and the Minister. Would that be accurate or is it slightly different than -- the slide may not have meant anything, in particular.

COLONEL DROVER:

A. No.

MS. FAGAN:

Q. It's just --

COLONEL DROVER:

A. There was that slide and some testimony that

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may have been, depending on how you interpret it, as putting the NSS in some kind of a responsibility or chain of command in the structure, and that's not the case. NSS is an advisory organization, it's a secretariat, to advise the Lead Minister SAR. They talk about policy and they can talk about coordination and communication and things like that, but there's no -- there is no decision making authority or the like in that organization. So it's aside from what I will explain here in a moment, how the military sort of reports up and down.

MS. FAGAN:

Q. Okay. Does this Secretariat -- it's not this Secretariat that chairs the group, the six departments?

COLONEL DROVER:

A. It is.

MS. FAGAN:

Q. It is. So that may be where the impression is.

COLONEL DROVER:

A. Possibly.

MS. FAGAN:

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Q. That where the chair the group, maybe somehow they're in the line of command, but they're not?

COLONEL DROVER:

A. To make it perfectly clear, the Interdepartmental Committee on Search and Rescue is not in that line authority either.

MS. FAGAN:

Q. Okay.

COLONEL DROVER:

A. So both bodies essentially become advisory bodies, but obviously if you have all the departments that have a responsibility for SAR in one committee, if you will, through consensus, that information will be passed to the Lead Minister of SAR. So they serve in that capacity, as opposed to when Coast Guard or DND have mandates for the delivery of SAR, that is a responsibility passed down and authorities not through ICSAR.

MS. FAGAN:

Q. So who would be in the line of command or the chain of command?

COLONEL DROVER:

A. Well, the Minister has given the Defence that

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responsibility that I mentioned for aeronautical, and so through our Chief of Defence staff down to the air staff, and I have actually charts that will explain --

MS. FAGAN:

Q. So the chain of command goes from Minister down through Defence, and these other groups are involved and consulted?

COLONEL DROVER:

A. Right, yeah, that makes it.

MS. FAGAN:

Q. Okay, thank you.

COLONEL DROVER:

A. So again talking to our friends, the NSS, and this is the -- what I've just mentioned. So it's a managerial role to facilitate the cooperation, communication, and coordination. They don't have department's budgets, for instance, there's no authority to do equipment procurement. They can make recommendations saying that this should happen. That's the role basically. I mentioned -- again of our six partners, the two largest departments in terms of SAR delivery are the Coast Guard and the Canadian Forces, and you can see here the

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Coast Guard provide maritime component for maritime response, and maritime is a response coordination through the Joint RCCs, and there are some sub-centres, and I'll brief those separately as well that the Coast Guard actually mans totally, and from DND, again as was mentioned, our particular role. The bottom line is the overall effectiveness, operation, and the coordinated aeronautical and maritime search and rescue system.

MS. FAGAN:

Q. Just one question before you move to the next slide, the Canadian Coast Guard, is that an independent department or is that part of the Department of Fisheries and Oceans? Like, as a Minister, where is the chain of command there?

COLONEL DROVER:

A. It's the Department of Fisheries, but the --

MS. FAGAN:

Q. So the Department of Fisheries.

COLONEL DROVER:

A. The Coast Guard has a Commissioner, a structure, and an organization in that department.

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MS. FAGAN:
Q. So if there was a Coast Guard issue, it would ultimately go up the chain to the Minister of Fisheries, that would be the Minister responsible?
COLONEL DROVER:
A. That is correct.
MS. FAGAN:
Q. Okay, and the Canadian Forces, it would be the Minister of National Defence?
COLONEL DROVER:
A. That is correct.
MS. FAGAN:
Q. Okay, thank you.
COLONEL DROVER:
A. So for the CF then, the responsibility and execution of search and rescue activities rest with the Commander of Canada COM. We have different commands, and this particular command basically is responsible for all domestic -- which is in Canada, military bases, formations, operations, and the like, and they are the operational authority for search and rescue. When I brief on the Rescue Coordinating Centres, this is their superior

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

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

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

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Q. Before you go off this page, could you tell us where the statutory and regulatory regime is for the provision -- you said it's federal. So would it be in federal legislation?

COLONEL DROVER:

A. That's correct. Actually, the British North America Act, which is the division of powers and responsibilities, the federal government was given the responsibility for regulation of the aeronautics and maritime transport -- maritime for safety issues. Derived from that is the federal government's responsibility for search and rescue. I previously mentioned on the international agreements through ICAO and IMO and the International Convention of Safety of Life at Sea, Canada is signatory to conventions, and those conventions, as I previously mentioned, give us responsibilities and obligations to provide search and rescue services outside of our domestic borders. We also participate in international organizations, one of which is NATO, North Atlantic Treaty Organization, where we work on a standardization committee and that committee really defines standards that are

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international in nature. So the same terminology, same frequencies, and the like, and we're active participants in those kinds of conventions, and on the Coast Guard side, they also operate in the standardization committees. We have a MOU between Canada and the United States, a Memo of Understanding. So we conduct search -- it's sort of a borderless regime where we can operate in American waters, they can operate in Canadian waters, through an agreement, and this is all coordinated at a Rescue Coordinating Centre. So there's a number of layers where we have international obligations, where we have responsibilities. Of course, as I mentioned for the Coast Guard and the Canadian Forces, our mandate is derived from the Government of Canada, the Defence, Coast Guard, Fisheries, those responsibilities.

MS. FAGAN:

Q. So in our map or chart here, for example, we have a -- Greenland is shown up north, and there's a pink line. I take it, you know, that line is not actually drawn through the middle of the ocean, you figure this out by

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looking at your coordinates on your navigation equipment. Who is responsible for the other side of the line, and I take it what you're saying is these international agreements stipulate and lay out who's going to do what and how you're going to communicate? So who would be on the other side and how would you deal with that country?

COLONEL DROVER:

A. Yeah, and again, that speaks to our arrangements that we have, both bilaterally and multinationally laterally. In this instance, it's Denmark who has responsibility of the chunk on the other side of that purple line. For a mariner or indeed an aviator that's in trouble, you're right, the line is not what counts. It's where they are and where the rescue comes from. That is where the coordination kicks in and takes place. So this may well be -- and there is a rescue coordinating centre in Greenland and there's one in Trenton, and they would share information, decide who is running the case, decide where the assets are launched from, and this is all part of the international SAR

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network, if you will. It's very impressive when you consider it. So the whole globe basically, it's sort of allotted in this manner, the various responsibilities in a region. It doesn't mean that we stop at the border, but it means that there is a responsibility division and we share through communications with our neighbours how to prosecute cases. Does that answer your question?

MS. FAGAN:

Q. That answers the question. I take it on the west coast, it would be the United States?

COLONEL DROVER:

A. Correct. Okay, if I may refer, just as a comment at this juncture, in 1992, the Auditor General produced a report after a study of our Search and Rescue on a Federal level, and one quote I think is worth mentioning, and that's the timeliness of the response, which usually depends on the proximity of rescue resources to the incidents, is a critical factor in saving people in distress. "Our review noted that even in areas where Federal search and rescue resources were available, other

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resources often performed rescue because they were closer to the scene."

Earlier I mentioned that it's not an exclusive domain of Coast Guard or indeed CF to render the SAR response. We will certainly respond to those incidents that are within our jurisdiction and responsibility, but part of the mission of the rescue coordinating centres is to effect the quickest and the most effective rescue and if there's a better solution out there that may not be under the Federal umbrella, they would consider that. I'll have some more explanation on how that works, but it speaks to there is other partners and players in the system that actually participate. So we'll get more into that. So it's leveraging of resources that are present in the region, vessels, aircraft, resources. Indeed, in the last instance and the first instance, it is the CF and Coast Guard that will render assistance and we are structured to do so.

So basically, what we have at the Federal level, we have our response coordination and I mentioned the three regions. Each of those

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regions has a rescue coordinating centre and there are two maritime rescue subcentres, one in Quebec and one here in St. John's, and I'll have a little bit more on that. Canadian Mission Control Centre, and that's our satellite communications organization tracking for beacons, and then onto our units. We have the dedicated search and rescue units, both air and on the Coast Guard. We have voluntary organizations and we have commercial assets available as well.

MS. FAGAN:

Q. Just one moment. For the group, on occasion the Blackberrys will throw the static, so those that don't absolutely need to be monitoring it, it would be helpful if you could turn them off. Okay, thank you. That's what's causing the feedback and the static over the mikes.

COLONEL DROVER:

A. Okay. Mentioned the three regions, that we have it broken up, and we identify the regions by the city where our coordinating centre is based. So we have Victoria, Halifax and Trenton, and it shows where the subcentres are

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then, St. John's and Quebec City.

So the role of the joint rescue coordination centre is to coordinate the overall response to federal aeronautical and marine incidents. It's a 24/7 centre, operating in all three of them. So speaking of one, but all three are manned pretty well the same. The OIC, officer in charge, is a Major, a military, and he has a number of air coordinators and system coordinators, all military. On the Coast Guard side, they have a regional supervisor of marine SAR, or SMS, and they have marine coordinators and system coordinators as well.

Each of the centres are designed a little differently, but functionally, they're the same, and I have noted on this particular slide a website and that one is JRCCHALIFAX. It's a simple site. It's linked to a number -- - well, it's linked to the other rescue coordinating centres. It's linked to some of the squadrons, to the Federal SAR page. So for any interest to getting information I don't provide here, that's a really web source.

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MS. FAGAN:

Q. In the photograph itself, what centre is depicted in this photograph and what do the centres -- is there any difference in how the centres look?

COLONEL DROVER:

A. Not -- there is, yeah. The layout is different and for those sleuths in the organization, in the audience here, could probably look at the map, say that's Vancouver Island, this could be Victoria, and indeed it is.

MS. FAGAN:

Q. Well, it actually says it in the fine print under the -

COLONEL DROVER:

A. Is it? Okay.

MS. FAGAN:

Q. - under the photograph.

COLONEL DROVER:

A. I understand.

MS. FAGAN:

Q. But we did ask, in all fairness, I did ask the Colonel to put the website in for Halifax. I wouldn't want to think that the picture got

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swapped. The picture is still Victoria, but the website is for Halifax.

COLONEL DROVER:

A. Right.

MS. FAGAN:

Q. And in this photograph, we see charts and maps on the wall and computers. How does this photo, you know, compare to the other centres? Do they all have maps and charts? How are they -- how's the room physically laid out?

COLONEL DROVER:

A. Yeah, pretty much the same in that regard. It's interesting, we discussed this offline about having that big map on the wall. There's nothing like a quick look at what's happening in your region and this is the way business used to be done exclusively. What you'll find on the map, for instance, is you'll have the placement of all the primary SAR assets, both the Coast Guard, the ones that the military has, probably a placement of where your secondary assets might be, and some other sort of important features. On the map you'll see in the RCC in Halifax, we'll have all the oil rigs locations and communications

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

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centre.

Also in the centre, and I speak to it a little bit here in the next slide, I believe, we have a number of communication devices. So we need to be able to broadcast, communicate and receive broadcast and communications from vessels and aircraft and shore stations and it's very, very well connected, both satellite and terrestrial and HF, high frequency, in those capabilities.

MS. FAGAN:

Q. So you just mentioned the St. John's Centre. As I understand it, there's the overarching centre which is the Joint Rescue Coordination Centre in Halifax which has air and marine coordinators and specialists at those desks that we see here depicted at this slide, and in addition to that, there's a subcentre, a marine centre in St. John's. Is that correct?

COLONEL DROVER:

A. That's correct, and I have a chart on that in a couple of slides down, but they are a subset of Halifax, subordinate to, but -- and it's run totally by the Coast Guard folks, and they are, as it turned out, they are connected or

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adjacent to the Marine Communication and Traffic Services. So all the marine broadcasting capability is collocated with the subcentre. So any traffic, both on emergency frequency or commercial frequency, is all monitored in the same centre. So they're very well communicated, connected.

MS. FAGAN:

Q. And so the information that's on the screens in Halifax as to where all the vessels are located, whether they're fishing vessels or merchant tankers, is also available and on the screens in the marine centre in St. John's? They both can access all the same data?

COLONEL DROVER:

A. Absolutely. Absolutely, yeah.

MS. FAGAN:

Q. I believe you're now going to go through the personnel and who is actually at these desks and their -

COLONEL DROVER:

A. I shall.

MS. FAGAN:

Q. - their duties and their training, their qualifications. So if you could take us

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through the personnel that are in the centres?

COLONEL DROVER:

A. Okay, I can. In the rescue coordinating centres, we have an officer in charge, which I mentioned, and the qualifications for that position is a Canadian Forces SAR pilot or navigator and they have to complete a search masters course unit on-job-training. In all these positions, once you do the qualification courses and the prerequisite training and experience background, there is a, what we call on-job-training, which essentially a check out, which is in most organizations that makes sense, so that you don't go in charge until you've had sufficient experience in a particular centre, and that's what we mean there, and there are other courses that they do too, maritime rescue subcentre courses and a controllers courses. And he is responsible for the commander, the regional commander for the effective and efficient management of the JRCC and these commanders sort of, they get -- they're fairly involved. They don't live in the centres, but they're connected to the organization. So this commander reports

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fairly frequently to this superiors and gets guidance accordingly, and in a typical structure, he has a deputy who has essentially the same background and qualifications, usually a more junior individual, but a SAR experienced individual.

Then we come to the Coast Guard side, and they have the RSMS individual and he's the senior Coast Guard officer assigned to JRCC and he's responsible for the effectiveness of the maritime SAR system within that area of responsibility. Oft times it's not -- an incident won't be the exclusive responsibility for the Coast Guard or the military individual. They share a lot of the -- especially in a more complex system or SAR, they know each other's sort of requirements and they can lend assistance. So the centre, I guess, the manning of the centre works as a team in every respect.

MS. FAGAN:

Q. So are these -- is the commander and then the deputy and the regional, are they physically in the centre themselves or are they somewhere else?

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COLONEL DROVER:

A. These are all centre folks.

MS. FAGAN:

Q. So they're physically -- you know, they may not be working 24/7, but they come in and they're physically in the office?

COLONEL DROVER:

A. Absolutely. I mean, there is a rotation obviously and it's manned minimally. You'll find in most centres, three Air Force and three Coast Guard at any given time. There'll be more folks during the daytime because you'll have the supervisor, and they, from time to time, will sit a shift, if you will to do normal duties. So they have all the abilities and skills that the rest of the centre folks have.

MS. FAGAN:

Q. What level of experience -- I mean, you note that the qualification is to be a SAR pilot, but generally speaking, what level of experience would the commander and the supervisory roles comprise? What type of individual would be there?

COLONEL DROVER:

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A. As I mentioned, they, both on the marine side, come from a SAR background. So the marine individual would probably have worked on offshore SAR primary vessels and been in some command structure. On the air side, our controllers, by and large, have multiple search flying tours in a SAR squadron, maybe a staff job in my headquarters. That's a possibility. So they are sort of specialists in SAR, both on the Coast Guard and the CF.

MS. FAGAN:

Q. They physically conducted the SAR missions and put their time in in the trenches prior to taking the position at the desk?

COLONEL DROVER:

A. Most, if not all of folks you'll find in the RCC have had operational -- it's what we call operational, what you describe as actually doing SAR in some manner.

MS. FAGAN:

Q. And then we get down to the coordinators themselves. So what type of individuals are the coordinators?

COLONEL DROVER:

A. Yeah, again, as I mentioned, they do come from

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SAR backgrounds and they get the unit checkout and they get familiar with the centre and how it works, and what we do is we don't sort of qualify these individuals, even though they have a SAR background and now they're familiar with the centre. Like most organizations, we have a requirement to do a checkout scenario. So to give them their qualification certification, we have a scenario kind of program where they have to demonstrate that they can deal with certain complex search activity. We have an annual written exam that refreshes on their skills and abilities. We also have, on the military side, a central operational staff that do visits and they do -- it's a mixture of a checkout, I guess, and audit. So they go through the centre and ensure that the centre is complying with all their responsibilities, rules, regulations. So in other words, they don't have adopted local practices which is not in accordance with proper procedures. So there's some oversight continuing in the centres.

MS. FAGAN:

Q. So once you get your job -

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COLONEL DROVER:

A. You got to hang onto it.

MS. FAGAN:

Q. - it's not stagnant. You're going to be audited and inspected?

COLONEL DROVER:

A. Indeed, absolutely, yeah.

MS. FAGAN:

Q. Now you had mentioned the communication, since this is probably the vital role and function is to communicate all the assets. What do you use?

COLONEL DROVER:

A. Yeah. It is, I think, a key enabler to allow the RCC centres to function at the high level they do. Obviously to coordinate any incident response is the collection of information of the incident itself, and being able to dispatch the right SAR response and coordinate with that response and facilitate as well enablers, if you will, a successful operation. So, and later in my presentation, I walk through a little scenario which, while those SAR forces, be it maritime marine or aviation, are on route to a scene, the centre RCC are

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enabling by getting weather updates, finding where they should refuel, setting up medical reception at various delivery points. So in other words, when a helicopter arrives back in St. John's with a passenger, it's no surprise to the medical services. They are organized and on station to pick the -- to do the transfer. This is all done in the coordination centres and obviously it's done through phone, fax, e-mails. So we have a variety of sort of networks, if you will. Radio broadcasts on high frequencies and the line of sight frequencies, and then the Coast Guard has a number of communication networks which you plug into. The Defence has a network as well. So they have all these sort of connectivities. They are not lacking in terms of how and the ease with which they can communicate with any agency they need to communicate with, and that is -- I think it's important because without that, they would be hampered in being able to execute successful coordination.

MS. FAGAN:

Q. Now I had asked you if there was any type of

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record management system or any management system. Beyond doing this job, how do you keep track of what you're doing and how do you manage the information?

COLONEL DROVER:

A. Okay.

MS. FAGAN:

Q. And I think you prepared this slide in response to that request.

COLONEL DROVER:

A. You asked the question because you got my slides. No. One way or the other.

MS. FAGAN:

Q. We'll have to decide.

COLONEL DROVER:

A. Yeah.

MS. FAGAN:

Q. Cart before the horse.

COLONEL DROVER:

A. But I can speak to this. What you're referring to is the rescue mission management system. Earlier when I described we have the charts, but we have this computer-based interactive multi-screen display, but the sort of brains, if you will, of this is this system

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

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

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and they are 24 and 7 as well.

COMMISSIONER:

Q. Before we leave communications, Colonel, you were saying that your system tracks all vessels and aircraft offshore. Is that -- that is so, is it?

COLONEL DROVER:

A. In terms of your system, I would sort of qualify that, sir, a little bit by saying that the Coast Guard has access to databases where certain classes of vessels have to report positions, and this is automatic update we have. We, in the rescue coordinating centre, have access to all that information through our Coast Guard partners, absolutely.

COMMISSIONER:

Q. I see.

COLONEL DROVER:

A. And there's also a requirement for large vessels, 96 hours before entering Canadian waters, to report positions and that's tracked. All that information is available.

COMMISSIONER:

Q. But my, I suppose, immediate question is if a helicopter bound for the oil platforms leaves

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St. John's, does someone notify you or do you check databases? How do you know that aircraft is on its way?

COLONEL DROVER:

A. For the air picture, it's a little different, and I didn't speak to that actually.

COMMISSIONER:

Q. Oh, okay.

COLONEL DROVER:

A. But I can. Normally we do not track air movements, but NAV Canada, which is the agency through Transport Canada that actually does the air traffic controlling, they know where aircraft are, the ones at least operating in a flight plan, and normal air traffic is not of interest to the rescue coordinating centre. A little later in my presentation, I'll discuss how, in an emergency, these aircraft will get word to the RCCs that they're in peril.

COMMISSIONER:

Q. I see, okay.

COLONEL DROVER:

A. As an example, in the Cougar incident, our first notification in the rescue coordinating centre was from NAV Canada. The pilots in

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that aircraft reported their problem to NAV Canada, because that's their operating frequency, and the procedure is NAV Canada will automatically inform the rescue coordinating centre.

COMMISSIONER:

Q. I see, okay.

COLONEL DROVER:

A. But we don't have -

COMMISSIONER:

Q. You don't track them as such?

COLONEL DROVER:

A. No, I think you've had testimony where the company, Cougar, actually has a tracking system where they track their own aircraft.

COMMISSIONER:

Q. We haven't heard from Cougar yet, but I do know -

COLONEL DROVER:

A. Well, it was referred to, I understand.

COMMISSIONER:

Q. - Cougar is able to do that.

COLONEL DROVER:

A. But we don't have that information at the centre, at our centres. But companies, a lot

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of companies actually -- and the systems are becoming more sophisticated, so there's a lot more satellite based monitoring of traffic, both surface traffic and as well as in the air, but the important, I guess, aspect is when one of these vessels or aircraft get in trouble, it's how quickly my centres get notified, because that starts the whole process obviously.

COMMISSIONER:

Q. Yes, I see, okay. Thank you.

MS. FAGAN:

Q. So you don't -- we heard this system that Cougar Helicopter has, it was referred to as Blue Sky by the operators. Cougar hasn't actually spoken about it, but the operators did say that they have this tracking system, and I think what you're saying is you don't monitor -

COLONEL DROVER:

A. No.

MS. FAGAN:

Q. - those positions as they go, nor do you monitor Air Canada or Westjet or Porter, any of the other airlines?

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COLONEL DROVER:

A. Exactly. There's a lot of traffic out there. We don't, but NAV Canada does, and we talk to NAV Canada, so we get the information.

MS. FAGAN:

Q. With the vessels, for example, I understand that not only do the larger vessels have to report when they come in, larger -- some larger vessels have to have monitoring systems and the Canadian fishing vessels -

COLONEL DROVER:

A. Yes.

MS. FAGAN:

Q. - which are operating under Canadian fishing licenses, all have a vessel monitoring system. That information is relayed to the Department of Fisheries and Oceans, which of course is the overarching department for the Coast Guard. So when you say you have access, are you monitoring where all these fishing vessels are or is it a situation where you can go into the database and see where they are?

COLONEL DROVER:

A. It's more the latter. If you saw a dot plot of the vessels that are at sea in any given

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

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that vessel's description. It's a crab fisherman and it's operating in this particular area.

MS. FAGAN:

Q. And then your database goes further to say how big the vessel is?

COLONEL DROVER:

A. Oh yeah, yeah.

MS. FAGAN:

Q. And how many crew?

COLONEL DROVER:

A. Yeah, absolutely.

MS. FAGAN:

Q. And power and speed and all those.

COLONEL DROVER:

A. So we don't monitor as a part of our -- but we have access which becomes important when we need to know who in that particular area is available or who would be out there.

MS. FAGAN:

Q. And this would be part of that leveraging resources?

COLONEL DROVER:

A. Absolutely, absolutely, and the other part of that, of course, is on the Coast Guard side,

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with their responsibility for monitoring, some of these automatic reporting requirements, if that's not met, that triggers a uncertainty phase, which will alert the RCC that there may be somebody -- because any vessel that doesn't report a communications report that they have hourly or two hour and these ones, the vessel tracking system is automated, automatic. But if it stops reporting, it triggers the system to put in an alert and there's certain time waits and then that information comes to RCC and then that's how we establish an uncertainty there might be a SAR case. So it's -- that's sort of what takes place on a daily basis actually.

MS. FAGAN:

Q. And with NAV Can, if this was a helicopter, as I understand it, when the pilots or the dispatchers file a flight plan, they file that with NAV Canada to say, you know, where they're going, and I understand that part of that process in a flight plan is to indicate in the flight plan the ETA is 10:00. If I do not arrive or communicate back by 10:30, that's that timing, then issue or initiate a

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notice. There's a notice procedure. But that's part, as I understand it, of the NAV Can process. It's not just the vessels who have a time for a distress after their ETA. The aircraft have a similar type procedure. Is that fair or am I misstating it?

COLONEL DROVER:

A. No, that's absolutely correct, and there are certain sort of degrees, I suppose. Again, back to the air picture. If they are on a instrument flight plan in domestic air space, that requires this aircraft to be positively monitored by air traffic services. So any time that it fails to perform in the route that it was assigned, that triggers that there may be a problem and that will trigger a communications check. If it's flying to a remote destination where they have an ETA, as you said, time of arrival, there is a time limit, if it doesn't arrive, that absolutely kicks in the SAR sort of response that that aircraft didn't arrive. They are -- pilots are required to close flight plans. So when they arrive, they report that they are successfully arrived. In an airport where the

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destination of that aircraft happens to be, so if you're flying from here to Gander and Gander had you with air traffic services and you didn't arrive, that triggers it automatically. So it doesn't have to be a half an hour after. It depends on the circumstance, but it's the same -- that's how it works and information gets to RCC. A little later in the presentation, I'll explain what that means, like what does RCC do when they get that information, but essentially, that's how they fly.

When some of our SAR response incidents occur when you have remote operators operating in remote areas without doing proper notification, and in those instances, it may go a long time before it's actually reported as an overdue. So those are the most challenging because now we depend on -- if it happens to be a crash, we depend on a beacon to signal our satellite response and if that fails, it's -- a lot of times, it's somebody, sort of concerned citizen saying "we haven't contacted this individual." So there are many levels, I guess, in the air picture, and to

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some extent in the maritime environment, because not all ships are plotted and monitored. I mean, you can take your sailing vessel out and you're not obliged to report.

MS. FAGAN:

Q. And perhaps when -- later on you have a time, a sequence, a sequencing chart, and then perhaps as a couple of examples how some of these reporting and these time delays can affect the rescue effort.

COLONEL DROVER:

A. Yeah.

MS. FAGAN:

Q. And since we're at the break and before we move into the next section, which is your control centre, perhaps if we could take the break and then move on back to the PowerPoint.

COLONEL DROVER:

A. Okay.

MS. FAGAN:

Q. Thank you.

COMMISSIONER:

Q. Okay.

(BREAK)

MS. FAGAN:

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Q. Colonel Drover, just before the break, you were about to move into slide 32, which -- you were on slide 32, the maritime rescue. I don't know if you have anything else to say about that centre or if you want to move into the next centre?

COLONEL DROVER:

A. We can move on to the next centre, if that -

MS. FAGAN:

Q. That would be great, thank you.

COLONEL DROVER:

A. Okay. All right. I'd now like to switch to another centre that is part of our SAR response network, the Canadian Mission Control Centre, CMCC. The role of this centre is to receive, analyze and distribute distress beacon alert information obtained from COSPAS/SARSAT system. Distress beacons, ELTs, EPIRBs, PLBs transmitting on 406 frequency. I'll explain those various beacons in a moment. This centre as well is manned 24 hours a day, seven days a week. This centre is manned primarily by Canadian Forces personnel. We have two civilian positions that monitor databases or maintain databases.

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And a major is in charge of this centre as well. Again, the individuals working here have SAR experience and background. We also maintain the beacon registry for the 406 beacon.

MS. FAGAN:

Q. Can you just explain what the beacon registry is?

COLONEL DROVER:

A. Perhaps I'll describe the next chart, the beacons, and then I'll answer that question.

MS. FAGAN:

Q. Okay.

COLONEL DROVER:

A. And remind me if I don't get back, but I should be able to address that.

MS. FAGAN:

Q. No problem.

COLONEL DROVER:

A. So we're talking distress beacons. There are three types out there that we deal with, and the first one is the personal locator beacon, and it's normally manually activated and it can transmit on several frequencies. 121. 5 and 406 are the two primary ones that we would

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have operating on those frequencies.

ELT, which is aircraft ELTs or aircraft-based emergency beacons, and they can be activated manually or automatically, fixed or general type of apparatus. Again, they operate on three frequencies, 121.5, the 423 and the 406.

And the EPIRB, which is a marine variance, the emergency position indicating radio beacon, and it can be activated manually or float-activated switch as well, operating on 121 and 406.

So these beacons communicate with the satellite-based system and the technology now allows these beacons to send an encoded message, which we receive in the Mission Control Centre, and we go to a database and in that database, that will record the information where this beacon originates, in terms of what it's attached to, the aircraft or a vessel, and it has a number of bits of information that's pertinent to resolving a SAR case, and those would include the owner, the type, the number of passengers possible, and the contact points. So it allows us a

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very almost real time start point, if you will, when one of these beacons are received, to be able to start to discover whether or not an individual or an organization or a ship is actually in distress.

Go to the next chart and you may recall seeing this graphic during our video this morning, and I'll just spend a little time talking to it, which will bring into focus what I just described in terms of beacons.

So we're talking a space based system that detects any beacon that may be transmitting emergency beacon, and I mentioned the three types that we may -- which would be marine based, shore-based, which is ELT aircraft, and the personal locator beacon, and once they send a transmission, there's an array of satellites, both geostationary and polar orbiting, that will detect the signal and it will download the signal to local user terminals which a lot of countries have these stations, we have a series of them, and this collects data, sends it to the Mission Control Centre. The Mission Control Centre is located in Trenton. It's adjacent to our rescue

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coordinating centre. Once the information is received in this centre, again, the controllers at this centre will go to the database and find out some information. They take, of course, the emergency information and automatically pass that off to the rescue coordinating centres and the rescue coordinating centres can then start comparing that information which would give them a distress location, with other information they may have had. They may have had a report from air traffic services saying they had a mayday report, an overdue. So this is part of the information collected at the JRCC, which will form a SAR case in most cases, and then we respond accordingly with SAR assets.

The one sort of change from the original sort of fielding of the COSPAS/SARSAT, it no longer operates at 121. It only detects 406 beacon signals. So it's -

MS. FAGAN:

Q. What does COSPAS/SARSAT mean?

COLONEL DROVER:

A. What does it mean?

MS. FAGAN:

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Q. It's one of the longest acronyms, I think, we've seen so far.

COLONEL DROVER:

A. Actually, I didn't give you the history of COSPAS/SARSAT, but I can take a couple of minutes and explain the genesis of that system. Actually, it was a cooperative arrangement with four countries initially involved, Russia, Canada, the US and France. Russia had its own system of space spaced detection of beacons and they called it the COSPAS. In North America, we created, and with French help, I suppose, a similar system and we call it the search and rescue satellite tracking system. So we took two acronyms, because the system actually uses the Russian component satellites and US-developed satellite components, with components from France and Canada. So we put it together and its now known as COSPAS/SARSAT.

MS. FAGAN:

Q. And is that when the 406 frequency came in or was it 121 and then moved to 406?

COLONEL DROVER:

A. Originally, it was 121 and the 406 or the 243,

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which is a military application, so it's principally for commercial operators 121, and during -- after the initial development, the 406 was designated an emergency frequency and it was incorporated into the current satellite array, because satellites have to be replaced from time to time, so it -- as we put new satellites in orbit, we did the conversion to the 406.

MS. FAGAN:

Q. So is 406 the world global frequency or is 406 just a North American frequency?

COLONEL DROVER:

A. It is worldwide, accepted distress frequency used worldwide and actually this COSPAS/SARSAT system it's fielded worldwide as well, just because the four nations that have provided its components, any country that's signatory that has a local user station will use it in the same manner as we use it.

MS. FAGAN:

Q. The registry system, if you didn't have a registry system, what I take it is that there's now a system that if people have these beacons or transmitting devices, they would

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register with this system so that if their device went off, presumably has a number or some type of identifier, then you could, you know, match that to the data that belonged to that device. If you didn't have a registry system and didn't have a database which would tell you what device belonged to what type of aircraft or vessel, and presumably there was no registry system at some time, what would the circumstance be? What would the situation be?

COLONEL DROVER:

A. It's a good question. Originally when we field out the satellite system using the 121, it didn't have the encoded capability to identify the owner of that beacon. So there was no database, no database requirement. Notwithstanding that, what this system does do, and maybe I didn't explain it fully, is that it gives a position where this beacon is signalling from. That position, with or without the registry, we get with the 406 as well. The advantage to the registry is we can determine, in addition to the location, some more information that we're -- so we know what

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type of aircraft it would be.

The second thing, it allows us to make contact with the owner to see, in actual fact, if this is an inadvertent activation, because we've had false alarms. In the old system 121, there's absolutely no way to tell if it's a false alarm. You launch a SAR asset to go and you'll find this beacon has probably been activated during a maintenance in somebody's hangar. This registration program allows us to contact the owners. It's -- I mean, it's just one more sort of advantage to the system, but at the end of the day, there's enough information from satellite detection with this system to alert the SAR that there's a distress or a possible distress and we would take appropriate action.

MS. FAGAN:

Q. If you can't reach the owner, do you still launch the SAR?

COLONEL DROVER:

A. Absolutely. Absolutely. The beacon distress call, if you will, activates the SAR system and that starts a whole series of activities at the RCC to get as much information as they

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can, but they start with a location.

MS. FAGAN:

Q. If you could reach the owner, say it's a vessel, how does being able to contact the owner and find out what the circumstances are, if it is -- say it's a real distress, how does that impact how you prepare or gear up or how does knowing what type of aircraft you're looking for affect the team when it's gearing up to conduct its mission?

COLONEL DROVER:

A. The more information you can gather and the quicker you can gather it, the better you're prepared to field the appropriate response. Later on in my presentation, I will talk about some of the considerations given before we launch a particular aircraft or asset. You'll also find, from my presentation, that most of our SAR forces are already sort of pre-prepared on the ground, if you will, to deal with an array of possible incidents. So it's not like we have to do a serious reconfiguration. But information is an important factor and the more information that we can get, the better we can prepare, in

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terms of how many people might be involved. If we know the type of aircraft, that is helpful, lacking any other sort of confirmed information that we may get from air traffic from NAV Canada and that sort of thing.

MS. FAGAN:

Q. Okay. On the beacons, and in particular the PLBs.

COLONEL DROVER:

A. PLBs.

MS. FAGAN:

Q. The personal beacons, we did have information before us on the suits that are worn, the survival suits that are worn by the workers travelling offshore, and in the exhibits put forward by Helly Hansen, they had a photograph of the suit and it showed a strobe light and it also shows a marshall type beacon, and as I understand it, the workers travelling offshore Newfoundland and Labrador have the automatic -- it's an automatic deployed activated homing type device and the one that's used in Nova Scotia is a manual activation, but it's a satellite signal. Now you, in your slide, showed the devices that are satellite. You

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mention one was manually activated and I take it you're familiar with these types of devices and could you just explain the beacon with the satellite, you've just described it, that's the one with the 406 and the signal gives -- goes to the satellite. What about the beacon or, you know, the personal locator beacon that's not a satellite type device, it's more of a homing device. Can you explain the difference and how they assist in a rescue effort?

COLONEL DROVER:

A. Yes, I can. There are two different elements at play. For the satellite based beacon, distress beacon, it will provide a location, depending on whether it's not GBS connected, it'll give us a position which will be within kilometres, five kilometres or less of the actual position. The current way to home these beacons is with the addition of a 121 signal that's accompanying the ELT and EPIRB 406. In other words, we get the position from the satellite, but to home the beacon, we use a small sort of side frequency of 121, which is also transmitting from those distress

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beacons. That allows us to actually home in on the object in the water or on the land.

A homing device, in the form of a PLB, gives us that same ability, transmitting on 121. If a PLB is transmitting on 406, it will give us a location, but that location will be small but a general area, as opposed to a precise area. So we have the location and the other aspect is the homing capability which we get from 121.

So in theory, the better, if you had two choices, would be to have a personal locator beacon that, if you had a choice, it would be probably with a homer, if you're in a situation where the incident would be sort of easily found. So in other words, if it's an area, a man overboard where you know the position of the ship, then that homing application makes the search sort of effective, as opposed to having a satellite giving a general location of where that position is. Is that -

MS. FAGAN:

Q. Yeah, that's what I'm looking for.

COLONEL DROVER:

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A. Okay.

MS. FAGAN:

Q. Because what we had, and I could be wrong, but the evidence, as I understand it, was that the beacon that's worn by the workers travelling offshore Newfoundland has the homing type feature. It is not the type of beacon that gives a satellite feed, and basically what I understand is that the Blue Sky system keeps track of where the helicopter is. So it is known, for the most part, with a fair bit of precision where the helicopter is, and what I'm hearing is that if you have the general location, if you know within two or three or even four kilometres the location of the accident, then the homing feature is better because that will bring you precisely to the passenger. Would that be a fair statement?

COLONEL DROVER:

A. That is correct.

MS. FAGAN:

Q. Now the second feature of these devices is one, the one being worn by the Newfoundland and Labrador workforce, are automatically activated once they make contact with

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saltwater. The other device, which has the satellite type feature, requires manual activation. Now you've run these SAR missions and you've seen how people react. So in your view, have you seen the manual versus the automatic type features, and would you comment on which one is more effective?

COLONEL DROVER:

A. Actually, from a SAR response perspective, any automatic activation is superior to the one that requires a manipulation by individual, simply because incapacitation or any other cause that would prevent that manual activation, then there's no signal and there's no assistance for the SAR service. So an automatic activation will almost certainly guarantee that you'll have that activation when it's needed.

MS. FAGAN:

Q. Thank you. I'll have you move on now through.

COLONEL DROVER:

A. Okay.

MS. FAGAN:

Q. I think your next slide is homing.

COLONEL DROVER:

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A. It is, and -
MS. FAGAN:
Q. I don't know if we've covered it all.
COLONEL DROVER:
A. We did, and I think the note on this particular chart, I just put this in to make the note that we actually have the capability for our aircraft to be able to home the devices that Cougar aircraft have, the ELTs that they carry, the 406, as well as their immersion suits for their crew and passengers.
MS. FAGAN:
Q. So the ELT, that is the satellite type based device?
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. And the passengers, that's the homing type device?
COLONEL DROVER:
A. Correct. Correct, and we have the capacity -- because as I previously mentioned, Cougar operating their ELTs at the 406, also transmits on the 121, which allows us to home, as they all do.

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MS. FAGAN:
Q. Okay. I believe this is a slide on locations.
COLONEL DROVER:
A. Correct. Continue?
MS. FAGAN:
Q. Well, this slide 37, as I understand it, shows the locations of a number of squadrons and can you please explain where the assets are, what assets are at these locations? I mean, what do these locations represent when it comes to SAR?
COLONEL DROVER:
A. I can indeed. Again, we go back to our three rescue regions, and each of those regions have dedicated search and rescue squadrons and several of them also have secondary units that have SAR capability. So on the west coast, we have one squadron located at Comox, and in the central, we have a dedicated squadron in Winnipeg, with a secondary unit in Cold Lake. Trenton is served by a squadron that's based in Trenton as well, with secondary in Bagotville, and on the east coast, we actually have two dedicated squadrons, one in Greenwood and one at Gander, and a supplementary or a

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reserve squadron, a secondary squadron in Goose Bay.
MS. FAGAN:
Q. You have primary and secondary and then voluntary resources. So you're going to give us all the resources and where they all are? Is that correct?
COLONEL DROVER:
A. Yes, ma'am.
MS. FAGAN:
Q. Okay.
COLONEL DROVER:
A. I'll do that next.
MS. FAGAN:
Q. Yes, please.
COLONEL DROVER:
A. And again, just show you the map where these units are located, and I'll just speak briefly about the disposition, the posture, if you will, of where our aircraft are, and two in particular, I'll elaborate a little bit more on the capabilities of those particular platforms, because they're most at play as applies to the east coast.
Starting on the west coast, we have the

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

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has a dedicated aircraft on status, if you will.

MS. FAGAN:

Q. And if needed, and does it happen where some of the these aircraft may be moved or used by other bases and how does that work?

COLONEL DROVER:

A. We certainly maintain this posture and to do that, there may be occasions where we may temporarily assign one of the west coast helicopters to the east coast, or more likely, between the two east coast helicopter units, we may move one aircraft from one unit to another. So they're not fixed permanently. Easier with a Hercules, we can draw from Trenton to backfill, if there's a requirement in Winnipeg, say for instance. So yes, they are certainly mobile in that extent.

MS. FAGAN:

Q. Okay.

COLONEL DROVER:

A. So just down the chart, we look from Comox, we get to Winnipeg, Manitoba, and we have our Hercules as the main SAR platform. Trenton has a Griffon helicopter and actually this

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picture here is depicted as a army or tactical aviation, at least colour. It is actually in the SAR colour scheme. The Hercules are not, but the Buffalo and the helicopters, including the Griffon, have the yellow SAR paint scheme.

And on the east coast, we got the Cormorant and the Hercules out of Greenwood, and of course, we're familiar with the Gander operation with the Cormorant.

I mentioned our secondary squadrons, and we have three combat support squadrons and they operate with Griffons, and these aircraft actually are SAR configured as well. We have SAR Techs, which I'll talk about momentarily, assigned to those squadrons. The difference is their primary role is not search and rescue. Their primary role is support military flying operations and exercises. They are, because they are SAR capable, available, but just not on 24 and 7 status. So they can be employed when available.

On the west coast and east coast, we have our Sea King aircraft and it has a secondary role for search and rescue. It has hoist capabilities. It's a fairly large cabin and

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it's obviously over water aircraft by function. So it is a secondary resource, and we've used the Sea King often in SAR operations.

Also, at Comox and Greenwood, we have the Aurora aircraft, and this is aircraft by virtue of its speed, range, endurance, has a capability to provide the first on scene in some incidents and work as a command or communications platform, sometimes a command and control platform. It has the capability to deploy what we call a Sea SKAD, which is a deployable package that delivers life rafts and various survival for a marine incident. So it actually has some capability to deliver rescue materials to the site.

MS. FAGAN:

Q. On this as well, there's -- just on the bottom, it says "and any CF aircraft or Navy vessel as appropriate." Could you elaborate on how you would access other aircraft or Navy vessels?

COLONEL DROVER:

A. It's fairly straightforward. The two RCCs on the coast, or in the Maritime area, they're

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command centres, and the commanders of those two regions are actually the fleet commanders east coast and west coast. So it's a fairly straightforward matter of going through a requesting process where actually the RCC coordinators can go right to the command centres for the Maritime organization and request additional assets. If there's a ship, for instance, at sea, they can easily be engaged. They have ready ships that can be prepared for sailing within hours and those could be employed through this requesting process. For any other aircraft, military aircraft, it's merely a case of determining what's in the area, which as I previously described as capabilities that they have RCC to make contact with the various assets and resources and work through an appropriate command structure, but easily to engage those types of aircraft as well. So those are the activities that are at the JRCCs in determining what the best, the quickest, the fastest, the most effective SAR response, those are considerations, absolutely.

MS. FAGAN:

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Q. And would it be fair to say that the JRCC knows where the Navy vessels are and where some of these other assets, in addition to knowing where they commercial assets such as the fishing vessels, would they also be informed -

COLONEL DROVER:

A. They have the -

MS. FAGAN:

Q. - as to where all these assets are?

COLONEL DROVER:

A. They have the resources very quickly at hand to find out. They don't track them, as again same as the vessels, as part of their normal duties. They have a system in place to be able to tap into those databases or command centres to find out for sure and that's again part of the work of the staff at JRCC to continually update those procedures and routines, so that they don't have to search when they're needed.

MS. FAGAN:

Q. Okay, thank you.

COLONEL DROVER:

A. Just a word on our volunteer organization. We

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have, for a number of years, engaged the community to assist in our responsibilities for the SAR response and we have an organization called CASARA, Civil Air Search and Rescue Association, and they provide aircraft and crews, search communications functions during SAR operations. They cannot be tasked -- so they're not part of any military asset that we can call forward, but we employ them quite often and we have arrangements to compensate, of course, for their expenses, and once -- they are part of the team in every manner, so if they're capable of assisting, they're available, then we employ them, and they don't have the capacity to drop things from their aircraft, but they serve more in a capacity of -- especially over land searches where the more assets you can employ, you can divide up. Because sometimes the search area is over land. It's pretty extensive, pretty extensive real estate to have to search, so they are a force multiplier and they assist greatly.

The other thing they provide is trained spotters and spotters for again search

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operations, not so much in the maritime environment, although it does take place, but for land searches, we have to fly over tracts of land looking for any evidence of a crash site, for instance. Searching is a required capability, I guess, an acquired capability. We have to train for it because there are ways to do it effectively, and it's also fatiguing. So you can't sort of continually search for long periods of time without losing your effectiveness. We, in our search aircraft, will employ members of the CASARA organization to join the crew as spotters and they actually help the crew maximize the effectiveness for a particular SAR search pattern.

MS. FAGAN:

Q. So are they taken on board the aircraft or are they -

COLONEL DROVER:

A. Yeah. They fly with us as part of the crew and we also have a training program that we sponsor and that allows them to fly with us on a routine basis, practice and training. The other thing that the reserves actually do, and I go back to my previous slide about

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prevention, where a lot of our CASARA members are actually community leaders. They're leaders in flying clubs. They're part of flying sort of fun events. They're respected and they are part of our education. So they preach, teach, safe flying practices. They have a network of contacts, just keeping flight plan information, ensuring that their members of their flying clubs and associations understand the importance of those aspects. So it's really a great contribution to our whole national SAR program.

And I won't go into it, but on the marine side, the Coast Guard Auxiliary -

MS. FAGAN:

Q. I was just going to ask you that.

COLONEL DROVER:

A. All right, okay.

MS. FAGAN:

Q. And I said I didn't mention Coast Guard before, and I didn't want to throw you, but is this where the Coast Guard Auxiliary would fit in?

COLONEL DROVER:

A. They have a very similar program, working with

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

MS. FAGAN:

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

COLONEL DROVER:

A. Absolutely, yes.

MS. FAGAN:

Q. Now you went through a list of various aircraft and what we're most interested in is

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

COLONEL DROVER:

A. Okay. Yeah, pleased to do that, and you're correct, the -- if you look back at the slide with the primary bases for the east coast, it's the Hercules and the Cormorant that are employed out of Greenwood and Gander for helicopter, and again, each of these aircraft bring sort of unique capabilities that enable us to do search response effectively.

Start with the Herc. It's a fixed wing platform, but it offers range, speed and capacity. So what the aircraft actually enables us to do is get to the scene of the incident more quickly, generally speaking, than a helicopter. So getting to locate, go to -- if it's a distress beacon that causes the alert or if there's an overdue report, which may require some searching activity, it can get on scene and getting an aircraft on

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

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

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

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

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not updated information where the incident site is, a more direct route to get to that location.

Serving as a COM platform, it can again, because of its COM suite aboard the aircraft, can communicate with, in most cases, shore-based stations like RCC, current updates so there's a sharing of information. So if a helicopter arrives on scene, the helicopter, because it's flying low, may not be in communication with all the agencies. The Herc, in this instance, could relay the pertinent information to the helicopter to conduct the successful SAR operations. Also, as a command and control, we call it on-scene commander function, where in an area where you have multiple search and rescue assets in a small area, they provide the services as a coordinator and controlling and assigning various altitudes for safe execution of that search area. So they control that particular small location.

MS. FAGAN:

Q. So the term on-scene commander, let's say we have two -- let's say we've got a civilian, a

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small civilian aircraft that's gone out as a spotter and they're trying to assist where they can, and then you may have a civilian helicopter and you may have a DND helicopter. Let's say you have three different pieces of equipment all operating below the Herc. So how does the on-scene commander -- could you just explain that term, because that's the first time, I think, we might have heard that and what does he or she do with respect to all these assets?

COLONEL DROVER:

A. Yeah. In a case like that, everybody will report on a common frequency. So every asset that's involved in the search operation is working in the same frequency. The Herc will identify its responsibility as the on-scene coordinator. It will assign each of those participants a responsibility area, sector, altitude and give them instructions. So they're in a controlled environment and they can't participate outside of that environment. So you can't have a media aircraft sort of flying to get the 6:00 news report. They come under restricted air space to the extent that

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it's controlled by this aircraft during the time of the incident.

MS. FAGAN:

Q. Yeah, and so this is actually happening in the Hercules aircraft, say, above the other three aircraft. What is JRCC doing? Because that's, you know, a group of coordinators at radios and phones in Halifax.

COLONEL DROVER:

A. Right.

MS. FAGAN:

Q. So a lot of people, I think, may be under the impression it's JRCC that's telling an individual helicopter "stay at this altitude."

COLONEL DROVER:

A. Sometimes that's the case, if you have one or two responders and they sort of work out their mutual arrangements without any on-scene commander. The JRCC is responsible for the SAR incident. So they own the incident, so to speak. If they have an on-scene commander in the form of a Herc, that on-scene commander is actually reporting to the JRCC. But what the JRCC does not have, it doesn't have that local situation. For instance, if the weather is

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really horrible, the on-scene commander may recommend to JRCC to hold the next aircraft on the ramp because there's no point in launching them, those sorts of things, but essentially that coordination takes place from the centre to their airborne aircraft.

MS. FAGAN:

Q. And the airborne aircraft might control the precise movements on the scene, but it's JRCC that's -

COLONEL DROVER:

A. The larger -- absolutely, large picture, and we can't forget the fact that if it's a marine incident, there's a Coast Guard aspect. So it's not only the aircraft in the sky who's coordinating the coastal vessels, and again, it's back at the RCC where they decide which vessels are best suited to go in what sector and that sort of thing. So yes, the coordination remains at the JRCC. The on-scene activities, and speaks mostly for the airborne picture and how to make it a safe and effective environment to operate from.

MS. FAGAN:

Q. Okay. So if there's a dispatcher at St.

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John's Airport and there's a piece of equipment that's looking to fly out to the scene, it wouldn't be the on-scene commander in the Herc talking to the dispatcher. It would be JRCC dealing with the dispatcher?

COLONEL DROVER:

A. That's correct, and if that airplane were inbound to the search area, JRCC would inform the on-scene commander that there is another aircraft joining and give him the ETA, estimate of time of arrival, and its call sign and stuff like that. So when this individual aircraft arrives, it reports in, on the same frequency that everybody's working, to the control.

MS. FAGAN:

Q. So once that aircraft that's inbound arrives at the scene, that aircraft would report to the on-scene commander?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. Who is the Hercules up above.

COLONEL DROVER:

A. And it doesn't have to be a Hercules.

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MS. FAGAN:

Q. It could be -

COLONEL DROVER:

A. We're talking a Hercules here, because that's one of the functions that it does on a fairly routine basis. One more thing that it does do, we use it as what we call top cover. When we have an extended mission, in other words we send our helicopter out to the very extreme edge of its range to fly out and back, the tracking and navigation is an important factor because they want to maximize their ability on site, if you will, before they have to return because of fuel. So we have our Hercules working that same incident to assist the helicopter in terms of direct flying and all the other things that they may assist, including flight planning and things like that. So it may not get involved in a rescue operation per se, but it may provide that top cover for -- so a lot of times it's just more than a single aircraft which would respond. It would be with the Herc as well.

MS. FAGAN:

Q. Okay, thank you. Now the Cormorant itself,

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the helicopter, and I take it from what you're saying is the officer in the helicopter could be the on-scene commander if there wasn't a Hercules or one of the other aircraft could be the on-scene commander?

COLONEL DROVER:

A. That's correct.

MS. FAGAN:

Q. We've got the example, and I think we understand how it works. So now can you go through the features of the Cormorant helicopters?

COLONEL DROVER:

A. I can. Again, we have what we consider a very capable SAR platform. In terms of range and speed, this is better than many aircraft, helicopter aircrafts that are in operation, not only in search and rescue, but in the passenger field, and it's got a good capacity cabin space which is important when we're dealing with evacuees, medevacs, injured individuals that require stretcher care or medical care on route, and some of the capacities we list there, it's the standard SAR configuration. It'll take two stretchers

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and four seated. We can modify this to do 12 stretchers and we can get 18 Pax seated comfortably. Clearly, the aircraft has configuration flexibility. So we can sort of make modifications as required to accommodate fairly large numbers of casualties.

Some of the features that set it aside from a passenger or commercial helicopter is the hoist, and we have two independent hoists in this aircraft. They're located in the same -- collocated in the same sort of structure, but they're two totally independent systems. So one system failure would not impact on the serviceability of the second system, and they both have capacity of 600 pounds, which allows a double hoist situation.

MS. FAGAN:

Q. On the hoist, are both hoists permanently in place or is it one hoist is there and if that hoist fails, you then have to attach the second hoist?

COLONEL DROVER:

A. No, they're both permanent installation and they're part of our standard configuration. So there's no requirements to do any swap out

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or change.
MS. FAGAN:
Q. Okay.
COLONEL DROVER:
A. And the other features that this aircraft, as a SAR platform, it's VFR and IFR. That refers to clear skies and instrument conditions where you have cloudy skies and the aircraft has a good capability to fly in moderate icing conditions, which again is not common to most helicopters that operate these days. And we carry some SAR equipment, of course, rescue baskets, pumps, rafts for marine application. So the SAR sort of load, if you will, equipment load, there's a standard sort of equipment that's always on the aircraft and we have the flexibility of adding, as required, to that before mission launch.
MS. FAGAN:
Q. Before you move into the next slide, do you know the winds limits for starting a Cormorant? We had heard in previous presentations that in high wind conditions, you can't start a helicopter, and, for example, when the Cougar helicopter lands on

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the rig, I think the protocol is to continue to run the helicopter so that they're not in a situation of having to try and start the helicopter cold while out on a Platform on the helideck, and we did have evidence as to the different types of civilian helicopters, what the wind limits were. So if you could tell me what the wind limits are for the Cormorant and do you start this helicopter inside a hangar, or do you start it outside, how do you deal with wind?
COLONEL DROVER:
A. Right. The challenge, of course, in high wind conditions with a helicopter is the rotor engagement and the rotor disengagement, and as it spools up with wind effect, it's whether or not the action of the blades interfere with the fuselage. So there are definite limits and they differ depending on the type of helicopter and rotor head we're talking about. For this aircraft, again it has pretty impressive operating capabilities, and I think the figure, I'll have to confirm it, but I'm fairly comfortable in saying that it's approximately 55 knots for rotor engagement if

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we can orient the aircraft in the right wind configuration. It will decrease down to probably 35 if it's parked where we have a tail wind, that sort of thing. All that to say that in most wind conditions, obviously, below that then there's no impact wind for engagement of the rotor. At this time, we do not have a procedure to start the aircraft in a hangar. It's not beyond the realm of possibility to start this particular aircraft or any with a suitably prepared hangar. Our inventory doesn't have that capability, but the other aspect, of course, is if the winds are that high, there are other challenges in sort of flying in those conditions, but those are the parameters that we're operating under today.
MS. FAGAN:
Q. Thank you. I know there was some interest expressed in the auto-hover capability of our helicopter, and I thought I'd share with you the rationale, if you will, why we think that the auto-hover capability is an important feature for our SAR helicopter. So when we chose to purchase a new rescue helicopter, we

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started, of course, with mission analysis, determining what types of SAR missions would be in play, and this is the whole gamut of what we'd be looking for and it speaks to night, day, over land, over water, and basically we needed a platform that was capable of performing hoisting. So in other words, they couldn't land, they'd have to operate in a hover situation to hoist people out of bush, terrain, arctic, or over the oceans, and because of the nature of SAR, it's totally random, this has to be accomplished day and night, so it doesn't respect hours of the day, and the very easy conclusion, I suppose, was that an auto-hover feature enables the crew to perform a rescue hoisting operation at night, which without an auto-hover becomes a very challenging and sometimes impossible procedure to execute safely, and as described on the slide here, if the pilots do not have horizon reference, it's very difficult to station keep -- keep the platform stable without those references, and the auto-hover allows that aircraft to maintain a geographic point and then there's still some

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manual manipulation to maintain that position over the person in the water or whatever you're rescuing, but it is a very essential feature that we think serves our -- makes our SAR helicopter effective, no matter what the conditions we're faced.

MS. FAGAN:

Q. Thank you. Now I think this is a great slide because it's like a floor plan of the inside of the Cormorant helicopter, and I'd ask you to take us through some of these positions, who is positioned where, what personnel, and then I have a number of questions depending on how --

COLONEL DROVER:

A. How complete my description is.

MS. FAGAN:

Q. How complete --

COLONEL DROVER:

A. Fair enough. Again I had mentioned earlier there's some flexibility in terms of how we configure the aircraft, but we do sort of maintain a standard configuration for the aircraft. We will have it parked ready for immediate launch with a standard fuel load.

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

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where you can't project out there. So it's a bubble window. It's kind of a unique feature, I guess, of search platforms, and it aids in search effectiveness.

MS. FAGAN:

Q. What about night vision goggles, do you use night vision goggles and how do they assist in searching?

COLONEL DROVER:

A. Night vision goggles has been a great invention for the business of search and rescue, and, yes, we do employ them. What they allow us to do is obviously see better at night, but more importantly, they allow us to be able to conduct search operations when without them it just wouldn't have enough visibility to be able to do it safely. One very, very key area of effectiveness is the night vision goggles have a great capacity to pick up a light source. You mentioned, although we didn't talk about, the strobe light where the immersion suit has a strobe light. In the dark, otherwise, and the illumination at night, with night vision goggles, that's very, very distinctive. You

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may see it with the naked eye, but you'll surely with night vision goggles be able to focus on that and bring it in. So very much a part of our SAR capability.

MS. FAGAN:

Q. The air crew, and I don't know if there's a difference in what they wear, but we have two pilots and then we have a number of technicians. What type of flight suits, survival suits, do they wear, and then I'll ask you to go through some of the features of what the SAR techs and the pilots use?

COLONEL DROVER:

A. For normal over water operations, they wear the -- the crew will wear immersion suits, and we have certain sort of requirements, depending on wind and sea temperature, but generally speaking in the North Atlantic, they're in immersion suits. The SAR techs may have -- if they're going to do a dive, will have a wet suit as opposed to the dry suit that the crew members. In addition to that, the crew members operate with a life vest kind of arrangement as well, so it's a combination of -- I don't know the brand names of that

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stuff, but we do have immersion suits.

MS. FAGAN:

Q. So do the pilots wear immersion suits as well as the -- are they all the same, except that there's a dive.

COLONEL DROVER:

A. Yes.

MS. FAGAN:

Q. Then the techs would wear a wet suit.

COLONEL DROVER:

A. They can. Again depending on what the mission is and how they're configured, they'll have some kind of a survival suit that they're wearing.

MS. FAGAN:

Q. Do they have strobe lights or beacons?

COLONEL DROVER:

A. The survival suits that are worn by the crew don't have beacons, but they do have strobe lights.

MS. FAGAN:

Q. And what about breathing apparatuses. We have a fair bit of information here on a device called a HUEBA, which is a Helicopter Underwater Escape Breathing Apparatus. We also

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heard that some military use breathing apparatuses. So do the pilots and the techs, do they both have apparatuses, or nobody has an apparatus?

COLONEL DROVER:

A. We outfit all our crew positions with an emergency breathing system, and it's basically a bottle of compressed air. It's readily accessible regulator and mouthpiece and it provides two to three minutes of breathable air.

MS. FAGAN:

Q. Is that part of the suits that are worn by the pilots and SAR techs, or is it a canister that's available and accessible?

COLONEL DROVER:

A. It's attached to the equipment that they're wearing.

MS. FAGAN:

Q. So it's attached to the suit. So the suit that the pilot would wear or the pilots would wear, would have a floatation device, it would be some type of immersion suit, survival suit, and it would have a strobe and it would have compressed air?

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COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. But it would not have a homing locator type beacon?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. Would the SAR techs need a hoist or winch if they were going to complete a medevac from a helideck? If you're landing, do you need the hoist or winch?

COLONEL DROVER:

A. No, any time over the land or a deck that you could land on, there's no requirement to hoist. The SAR techs do the scene. If it's a safe environment for the aircraft to land, that is the best first choice and option. In circumstances and situations where you can't do that effectively or safety, requires the hoisting of the SAR techs.

MS. FAGAN:

Q. Does the hoist or the winch which is permanently configured, I take it that remains there in position if you're landing?

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COLONEL DROVER:

A. Yes.

MS. FAGAN:

Q. You don't have to remove it to land. Does it in any way impede the ability to land on a helideck?

COLONEL DROVER:

A. No, it doesn't.

MS. FAGAN:

Q. That's all my questions on this slide.

COMMISSIONER:

Q. Before you leave that, I just have one or two questions. I notice you have a flight engineer. Now I think we all remember when commercial jets had a flight engineer as well. They gave them up. What safety connotation does a flight engineer have in the Cormorant?

COLONEL DROVER:

A. Sir, they obviously -- in the cockpit, they serve the traditional roles and responsibilities that a flight engineer would, monitoring systems, fuel flow, and things like that. They actually in addition for the SAR crew application are part of the crew that would operate the hoist. So if I sent my two

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SAR techs down to a rescue suit, I've got two pilots that actually fly the aircraft, the flight engineer is no longer in the cockpit, he's back operating the winch. So he becomes -somebody has to do that, so we assign and train our flight engineers to serve in that capacity and it's a very effective use of crew positions.

COMMISSIONER:

Q. So if you didn't have that person, one of the SAR techs would have to operate the winch or whatever?

COLONEL DROVER:

A. That's correct, which would -- in a lot of circumstances, as a matter of fact, most applications, depending if it's a crash site that require medical treatment before extraction, we -- our philosophy is to send two SAR techs. In a lot of cases, for instance, just taking an injured victim from a crash site, to move that victim to a place where you can actually execute a hoist operation, you may have to manhandle, if you will, so it takes two SAR techs. There's some pretty sort of challenging things they do.

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When we do a water entry, again the buddy system having two there, without the flight engineer or another crew member, we could only deploy one because you need a hoist operator.

COMMISSIONER:

Q. I see. One other question, not perhaps directly -- well, it is directly related to the aircraft. When an aircraft is on standby or ready to go to the highest state of readiness, is it fuelled? What I'm really asking, there are no dangers, I take it, in pre-fuelling the aircraft?

COLONEL DROVER:

A. No.

COMMISSIONER:

Q. Whether it's called up or not?

COLONEL DROVER:

A. No, the challenge sometimes, depending on which aircraft we're talking about, is what fuel load to put on the aircraft. So if you want to take additional SAR rescue equipment, you may need a smaller fuel load. If you want maximum range, a higher fuel load. We have a normal ramp fuel load that all our SAR aircraft will have. So for all intents and

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purposes, this aircraft is ready to go flying without any additional servicing. That allows us to meet our minimum take off requirements.

A very quick addition to fuel can take place while the crew are flight planning and boarding the aircraft if required, but normally speaking, the aircraft is primed ready to go with a fuel load that will allow him to do the SAR mission.

COMMISSIONER:

Q. And in the case of a heavy lift helicopter, which these are, of course, from empty, how long would it take to refuel such a helicopter approximately?

COLONEL DROVER:

A. The turnaround time would be about 20 minutes, I would suspect, but I am not technically familiar with this particular aircraft. Allow me, sir, if you would, to confirm that number, but it's a fairly quick application.

COMMISSIONER:

Q. It's not three quarters of an hour or something like that?

COLONEL DROVER:

A. It's not -- no, it wouldn't be that long.

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COMMISSIONER:

Q. Okay, thank you.

MS. FAGAN:

Q. Now can you take us through the components of a SAR crew?

COLONEL DROVER:

A. Okay, again throughout the morning we've been talking a little bit about search and rescue technicians from our opening video, and we've just had a discussion on some of the crew positions in the aircraft. So a SAR team, and we have SAR techs in the helicopters as well as fixed wing aircraft. The SAR technicians, as we alluded to, are basically those folks that we deploy that would render medical assistance, prepare individuals/casualties to be extracted from the scene and recovered. So they operate essentially away from the aircraft. In some situations, though, we don't deploy or SAR team. If we're still looking in the search phrase or while they're aboard the aircraft, they serve obviously in a SAR function, they do the spotting, looking at the clearance, and they sort of assist the crew, if you will, in the search phase. We

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

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

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

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commander.

MS. FAGAN:

Q. Before you move to the technicians, this is how you become a pilot and an aircraft commander. Once you've reached that level, what if anything is done to ensure that the SAR pilots remain competent?

COLONEL DROVER:

A. Right. There are a number of sequential requirements that they fulfil. We have an organization, a central organization of training and standards -- standards evaluation, I guess, is more what they are referred to, and this team actually will go to the unit and do standard check rides on individuals and crews. So that's part of in terms of making sure the squadrons maintain an appropriate level of competency. On the pilots, they do an instrument check ride each year and that's all the instrument procedures they have to apply. They do an annual proficiency exam, a written test, and a flight evaluation. It could be a day flight or a night flight. From an aircraft commander's point of view, there's a biannual SAR check

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

MS. FAGAN:

Q. Do the pilots at DND, the Canadian Forces, receive any simulator training, and if they do, how often do they have simulator training?

COLONEL DROVER:

A. Right. The simulator is sort of a part of maintaining competency and proficiency and currently with the Cormorant it's twice a year week in simulator, essentially going through all the flight parameters, emergencies, and things like that. So they do every six months.

MS. FAGAN:

Q. Is there SAR mission simulator training? Is that kind of training available, or is it general flying simulator?

COLONEL DROVER:

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

MS. FAGAN:

Q. How does simulator training affect the effectiveness or the abilities for SAR missions?

COLONEL DROVER:

A. What it does, the simulator allows us to train in emergency procedures and it ensures the proficiency of the air crew. It would be -- have to be -- those types of training sessions you would have to do in the aircraft to ensure those proficiencies. So it allows us to essentially have fewer flying hours and more simulator hours to maintain that high degree of simulation.

MS. FAGAN:

Q. Okay, thank you. Now what about the technicians?

COLONEL DROVER:

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

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

MS. FAGAN:

Q. So according to this, there's six and a half, almost seven years before they reach the point of team leader, and that's when they're selected?

COLONEL DROVER:

A. That's correct.

MS. FAGAN:

Q. They could have years before they're even selected?

COLONEL DROVER:

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

COMMISSIONER:

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Q. Excuse me, there would be certain -- to be a SAR tech team member --
COLONEL DROVER:
A. Right.
COMMISSIONER:
Q. Training of 18 months approximately, but that would be on top of a certain degree of formal education, obviously?
COLONEL DROVER:
A. Yes, sir, and if they came from another occupation, there's occupational training, there's military experience, so before they even enter the stream of SAR techs, they come with some basic training and a degree of education, and that's -- I'm not entirely sure what that is, but they certainly have those requirements.
COMMISSIONER:
Q. I see. So they are military people to start with?
COLONEL DROVER:
A. For the most part, we are starting to recruit as an initial trait, but even that, they would still get the basic military training before they enter their occupational training. So

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

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

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

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various locations to do the specific training that's called for.

MS. FAGAN:

Q. Perhaps you can go through a little bit on the course, the basic course, and then we'll have to break.

COLONEL DROVER:

A. Okay. So basically again it's pretty much a year long event, eleven months, as the schedule works, and it includes all the disciplines that will sort of go into the makeup of their abilities and skills; winter, ground, arctic operations. Medical is a large portion of it. They get a lot of their medical training or assistance from the Justice Institute of British Columbia, and they have paramedic program responsibilities, so they train in conjunction with those. Parachute operations, helicopter operations, sea survival, diving, overturned vessel, mountain operations, tech rock, snow, ice. Operation and evaluation phase takes in a very busy and challenging year. Just a quick series of -- which will just sort of amplify what I said with a few pictures. Obviously,

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they can go from either type of our aircraft and the whole idea is they provide emergency - and it's not emergency first aid, this is life saving rendering medical protocols. So they're trained to be able to support and sustain life until we can execute a rescue and get the casualties/victims to a medical facility, and they can operate over water or in the mountains.

MS. FAGAN:

Q. And I think what I'll do is we'll stop there because I do have a -- I don't want to go through this too quickly, and I do have a few questions. So while we're on their capabilities, if we can break and then deal with that after lunch.

COMMISSIONER:

Q. All right, see you back at 2 o'clock.

(RECESS)

MS. FAGAN:

Q. Okay, Colonel Drover, just before lunch we were dealing with the SAR Tech capabilities and I didn't want to cut you short on that, especially if it takes so many years to become a SAR tech. Could you continue on with your

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description?

COLONEL DROVER:

A. I shall do that, thank you very much, and perhaps before I start the next slide, Mr. Commissioner, you asked a question before lunch that I didn't have a precise answer in terms of the time to refuel. I had my SAR tech friends as others sort of report to me, that as I quoted this morning, 20 minutes on average with a high speed connection is normally the time it would take to refuel a helicopter.

COMMISSIONER:

Q. I see.

COLONEL DROVER:

A. It can be shorter if we do it in a hot refuelling, keeping the engines running, and it could be longer if we don't have that high pressure connection.

COMMISSIONER:

Q. I see, okay, thank you.

COLONEL DROVER:

A. Okay, so we'll pick up where we stopped for lunch talking about the SAR tech capabilities. These are just a series of slides that just

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

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

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MS. FAGAN:

Q. So that would bring you to slide 57?

COLONEL DROVER:

A. That's correct.

MS. FAGAN:

Q. Okay. Now how do the SAR techs remain current once they're trained? What do you do as a checking process?

COLONEL DROVER:

A. Again similar to the air crew, the flying crew, they have standards and requirements to meet to maintain their competency and their currencies. The same organization that provides the standard of L Team also does the evaluation and checks for the SAR techs. Individual skills, the medical re-certification every two years. They do an annual dive proficiency, an annual proficiency exam is written and a written test, and they do periodic flight checks, SAR scenarios.

MS. FAGAN:

Q. Where would they be from a medical experience or their level of medical skill? You know, we've heard the term of a paramedic or the equivalent of a nurse or a registered nurse,

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and then you have a physician, and there may be other categories as well. Approximately what level or is there an equivalency for the SAR techs medical education and skills?

COLONEL DROVER:

A. There's no civilian equivalent category. They do possess medical skills which would be about the basic paramedic skills. They do do minor surgery. They have training and skills that really is geared towards the saving of lives. It's not necessarily what you would see in a hospital, but it is more than a first aid for sure. Way more, as a matter of fact. So they -- and a large part, as I mentioned, of the training program is focused around those medical skills and abilities.

MS. FAGAN:

Q. What type of medical equipment or supplies would they use in the way of medical instruments? Defibrillators, any type of drugs or medication that they're authorized to use?

COLONEL DROVER:

A. We have a standard sort of medical package that includes splints and bandages and things

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you would expect of first aid, and they have special equipment. Defibrillators, if required, that can be loaded on the aircraft depending on the requirements. They have narcotics which they're authorized to administer like morphine. So they've had fairly advanced medical supplies that is part of their standard equipment, plus the aircraft itself, of course, has stretchers and litters and things like that.

MS. FAGAN:

Q. Who trains the DND SAR techs, who are the trainers, the educators?

COLONEL DROVER:

A. Back to our training school is where we have that dedicated school and they do phase training around the country as we described. Most of the instructors are actually senior SAR techs, very senior SAR techs that have had many years of field experience. We do draw on the BC Justice Institute to provide the medial training, and we do call on civilian contracted support to do mountain training, arctic survival training, and that sort of thing. So it's a fairly comprehensive

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combination, I guess, of a civilian specialist and our own SAR tech specialists that perform the academic package.

MS. FAGAN:

Q. At the SAR tech schools, are there any civilians trained at the SAR tech school or are they just military personnel?

COLONEL DROVER:

A. We train just the military personnel, and we have a full capacity sort of in-house group continually.

MS. FAGAN:

Q. Okay. Now if you could move to the section, and I believe this is your last section, but it's a very substantial section on operations, and I believe you're going to start with the incident distribution and some statistics so that we can have a sense as to exactly how many missions are run and where they're run?

COLONEL DROVER:

A. Indeed, and I think it's important again to consider the national perspective or federal provision of SAR is for the whole country, and based on that, with the statistics and the experiences, I've got a number of slides which

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will visually explain the types of incidents and where they are most likely to occur. The distribution pattern that you can see on this chart basically mirrors where the population density of the country is, and there's no big surprise with more people, you have more activity, which will lead to more instances of rescue requirements. The majority of incidents are certainly marine as opposed to aviation of land-based, and our -- I guess, again a bit of philosophy is that the whole sort of focus of our SAR response is to provide the greatest amount of good in the least amount of time, and that means that we need to be postured so that we can respond to all incidents and get there as quickly as possible, so those locations become important.

MS. FAGAN:

Q. And this first slide, slide 58, I believe this is from 1998 to 2001, correct?

COLONEL DROVER:

A. It is. I've got some more current statistics in the next couple of slides and the pattern has not changed. It's fairly consistent over

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the years.

MS. FAGAN:

Q. Okay, and the next slide is not quite the same time period, but pretty close to the same time period, and what's the difference between this slide and the earlier one?

COLONEL DROVER:

A. Essentially the distribution is -- this is a shorter period of time, so there's fewer dots, of course, but the same sort of densities are in place. What this chart shows, though, it shows where we have our primary search and rescue units located and the secondary ones are depicted in yellow, but again, as depicted here, is where the most concentrated activity takes place. So it's just to illustrate that they're aligned.

MS. FAGAN:

Q. And the secondary there, the areas where they're -- it's indicated SAR assets.

COLONEL DROVER:

A. That is the secondary SAR. Those are the helicopters and support units I briefed on with SAR techs.

MS. FAGAN:

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Q. With SAR techs.

COLONEL DROVER:

A. So moving on, we talked about the incident distribution, and we actually have categories that define the various types of incidents and they will be presented in this manner and I'll speak to each. An aeronautical incident is a search and rescue incident involving an aircraft over land, and a maritime incident, again it's a vessel, including medical evacuation of persons from a vessel, so people in the water, and an aircraft over water is also treated as a marine incident.

MS. FAGAN:

Q. A marine incident?

COLONEL DROVER:

A. That's correct.

MS. FAGAN:

Q. So the flight 491 was an aircraft, but over water, so that would be in the marine category?

COLONEL DROVER:

A. That's where it would go. Now that has nothing to do with how we respond, of course. That's where we categorize where the incident is,

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but, yes, that's what the category is. Finally it's the humanitarian category, and this is an incident that doesn't fall into aeronautical or maritime. That requires a CF SAR response in order to preserve life or relieves human suffering. Basically, most of these are provincial jurisdiction, and it may be coordinated through the EMO or local police forces. We in the federal SAR system get involved when the provincial responsible agency cannot respond in a timely manner for a variety of reasons. It could be the type of equipment versus a weather situation, and in those cases the request would be placed to our system through the RCC to render assistance.

MS. FAGAN:

Q. So we've heard information on medevacs, or air ambulance, and could you explain whose jurisdiction or who would be responsible for a medevac, and, in particular, medevac or air ambulance in the province on land, or medevac or air ambulance out to an oil rig?

COLONEL DROVER:

A. Okay, in a medevac which is in the category of humanitarian response, of course, if there is

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a requirement within a province using this example where a person needs to be moved to a hospital, that's a provincial jurisdiction, provincial responsibility, and they would be the first choice in terms of providing that service.

MS. FAGAN:

Q. So if we had a child in a remote location or St. Anthony and it had to come into St. John's, the first primary source would be the Provincial Government would be responsible for the air ambulance of that child into St. John's?

COLONEL DROVER:

A. That is correct.

MS. FAGAN:

Q. Now how does JRCC get involved, because I understand that on occasion you will do air ambulance?

COLONEL DROVER:

A. That's correct. So obviously the health services agency in Newfoundland would task their air ambulance contracted service, or whatever they have, I'm not entirely sure of the right terms here, but -- and if that air

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ambulance service cannot respond for reasons, that may be whether -- may be equipment related, the provincial health agency will contact RCC and place a request that the military provide that service.

MS. FAGAN:

Q. Have you had that occur in the Newfoundland area in the last year?

COLONEL DROVER:

A. Yes, more than one time. It's not an infrequent occurrence. In fact, I think I've got one here as an example. In early January there was a patient to be transferred from Central Newfoundland to St. John's, and the air ambulance service was unavailable and the Gander helicopter actually performed that mission.

MS. FAGAN:

Q. So the Gander Cormorant is what transferred the patient?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. Now when it comes to an oil rig, we have heard, and we'll hear from Cougar next week,

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that one of its contracted services is to provide air ambulance. Does JRCC get involved in retrieving and air ambulance medevacs from the oil rigs?

COLONEL DROVER:

A. Not normally. If there is a person off the rigs that require evacuation to shore-based medical facilities, it's normally given to Cougar and they would perform that mission. They are not required to inform the Rescue Coordination Centre, and the Rescue Coordinating Centre will not do anything in terms of providing SAR resource backup. So essentially it's not a federal responsibility at this stage, and there would be no specific actions taken by RCC.

MS. FAGAN:

Q. Okay, so would it be fair to say that the oil rig manager, if they required a medevac, would contact Cougar, ask for the medevac, Cougar would perform that service and JRCC would not be involved in a routine medevac off an oil rig?

COLONEL DROVER:

A. That is correct.

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MS. FAGAN:

Q. Has JRCC ever been involved, and if so, do you have an example or circumstance where you would be involved in medevacing a worker off the oil rig?

COLONEL DROVER:

A. The federal SAR services have been involved in incidences that you described. We had a case on the 20th of December of last year where there was a requirement to move a patient off the Stena Carron, experimental oil rig in the south, and initially it was tasked to Cougar and for reasons of weather here in St. John's, Cougar couldn't dispatch their helicopter. The request again would be transferred to the RCC, which it was, and Gander was tasked and Gander actually flew a helicopter to the rig and returned the patient actually in this instance to Sydney. The reason why Gander could perform the mission is because of weather situation in the interior of the province that particular day that allowed them to execute the mission. So that's an example again if for whatever reason Cougar could not perform that service, we'd get the call.

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Whether or not we could or could not, that's another -- but at that stage, we accept that mission as a federal responsibility.

MS. FAGAN:

Q. Does the JRCC or DND use the oil rigs or the platforms out there to assist them in conducting air ambulances?

COLONEL DROVER:

A. Indeed. Again, I think, in the environment we live in, and I hope I've expressed it a little bit so far, that there's a multi-jurisdictional effort involved in search and rescue, and a good example is when we actually operate our SAR platforms helicopter offshore at extended ranges, my helicopters can and often do get fuelling from the rigs themselves. I've got an example which also speaks to another category of medevacs. Oceangoing vessels in transit through our waters or into our ports occasionally have requirement to lift one of their crew or passengers off the ship for a medical reason, and that's a mission that we at RCC will execute and perform. We had a case, I guess, the 10th of January where a vessel was

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steaming and had a requirement to evacuate one of the persons on board the ship. The ship was well out to sea and we coordinated a medevac where our helicopter -- we had to wait some time for the ship to get in range, but the helicopter actually refuelled off one of the oil rigs and picked up the patient and brought him to a shore-based medical facility.

MS. FAGAN:

Q. Now you had shown a chart early on this morning in your presentation which showed the jurisdiction through international agreements for the East JRCC well out. It appeared to go pretty well maybe four or five hundred miles or more, the middle of the Atlantic.

COLONEL DROVER:

A. Yes.

MS. FAGAN:

Q. And when you say this vessel required service, was this a Canadian vessel or a foreign vessel, was it inside -- like, why did we respond?

COLONEL DROVER:

A. Because it was inside those international

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territorial boundaries, so it was our responsibility to respond as best we can. This particular vessel was a foreign carrier, and it's probably a good point to make here is that the flag doesn't really matter in a humanitarian, and indeed in any search and rescue situation, it doesn't really matter the nationality or the origin of the vessel or the aircraft. The response is going to be towards the objectives of responding and saving and preserving life, and that's a tenant that's international, so the same service would be provided for a Canadian flag vessel off the Alaskan coast or anywhere else.

MS. FAGAN:

Q. So when you say you were waiting for this foreign flag ship to get within range, you weren't waiting for it to get within the zone, you were waiting for it to get within fuelling range of the helicopter, would that be fair?

COLONEL DROVER:

A. That is absolutely fair, right. It's not until we are legally authorized to respond, it's our ability to respond that far out to sea. Now clearly we don't have the capability

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of flying across the ocean in a helicopter, and if that's the vehicle required to perform the rescue, then there is -- and that's the part about survivability, there are some sort of areas where the sort of victims, if you will, are more vulnerable and that's a time factor which I'll talk about in a little while.

MS. FAGAN:

Q. Okay, thank you. Now you have some statistics. We just heard about three, and I believe all of those were in the last four weeks, four to five weeks. So how many missions do you do?

COLONEL DROVER:

A. First of all, let me just display the total number and these are inclusive of humanitarian, marine, and air, and of all categories. What it demonstrates, this is broken down by our various regions, and those numbers are fairly consistent year by year. So we haven't really prevented the occurrence, but it hasn't increased greatly either. If I may move to this one here, this shows the division by category. You may recall I

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mentioned a little while ago that the majority of the incidents are indeed marine, and this one -- or maritime.

MS. FAGAN:

Q. So the marine are almost ten times the aeronautical?

COLONEL DROVER:

A. Uh-hm.

MS. FAGAN:

Q. Okay.

COLONEL DROVER:

A. I've got a few charts that's really kind of focused on the east coast because I think it's of interest to this body here, and again there's just another way to express the type of incidents and where they have occurred, and here's a little bit more recent data from 2004 to 2009, and that's in the Newfoundland region depicts -- this is just what we responded to using Gander as an asset. Now there are more activity -- there was more activity in this area, may have been responded by Coast Guard, and it just doesn't show on this chart, this was purely to outline where the helicopter based activity was focused.

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MS. FAGAN:

Q. So on the earlier slide, because some people may not actually be able to see this PowerPoint, on the earlier slide 65, it had indicated that in 2008 it was 191 aeronautical and 1,752 marine out of the Halifax --

COLONEL DROVER:

A. Right.

MS. FAGAN:

Q. So that would be that entire --

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. JRCC. So when it says Halifax, that would include Gander?

COLONEL DROVER:

A. Yes, quite right.

MS. FAGAN:

Q. And Greenwood. So now you've taken us down in your next slide to just what Squadron 103 --

COLONEL DROVER:

A. Exactly.

MS. FAGAN:

Q. The Gander base does, and this wouldn't include what was coming out of Greenwood or

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marine?

COLONEL DROVER:

A. That's correct.

MS. FAGAN:

Q. And then I believe you have some numbers there as to what all these dots mean?

COLONEL DROVER:

A. Okay. So this -- again this is sort of narrowing it down for a more precise period, and it also shows the various types. Again the split is, as we discussed earlier, the predominance of maritime, and it shows out of Gander where they're located relative to Gander.

MS. FAGAN:

Q. So this is just -- this would be 11 months, would that be fair?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. So in 11 months, Gander conducted 90 missions?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. And 63 are maritime, and 12 are aeronautical,

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and 21 humanitarian. So the aeronautical ones that are over the water would fall up into marine. So the aeronautical ones are only the air on land?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. Okay, that's fine.

COLONEL DROVER:

A. Okay, just a couple of charts to talk about the resources, and this was mentioned when I was talking on a national perspective. It just again talks about the two helicopters serving the Halifax region, the Hercules. We have two postures. Either the aircraft are on a half an hour to 30 minute response posture, or two hour response posture, and we average getting airborne in less than those stated numbers by a good margin, 25 minutes for the 30 minute, but for the two hour posture, we can manage an average of 70 minutes being airborne.

MS. FAGAN:

Q. What's the difference in the 30 minute posture and the two hour posture? When are those

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postures, and then what is in -- what's actually physically in place on each of those different postures?

COLONEL DROVER:

A. Right. The 30 minute posture is basically where the crews are with -- in the hangar, prepared to launch, if you will, and the two hour posture is they're not required to be in the hangar, they're on pager and they're recalled -- not too far from the airport. We have restrictions on how far you're allowed to stray from the flight line. So that reflects a longer period of time for the crews to muster and prepare for flight.

MS. FAGAN:

Q. Okay, and the Commissioner asked you earlier if the aircraft were fuelled. So whether it's the 30 minute or the two hour, are the aircraft fuelled?

COLONEL DROVER:

A. They are indeed. The aircraft is prepared for flight, and after each mission, be it training or a SAR operation, the aircraft is very quickly returned to the status that is prepared to be flown for another SAR mission

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fully -- fully restocked and refuelled.

MS. FAGAN:

Q. Are you aware of the SAR medevac response times in other jurisdictions, do you know if everybody maintains the 30 and two? In other jurisdictions, are you aware of --

COLONEL DROVER:

A. I would ask what you refer to as other jurisdictions?

MS. FAGAN:

Q. Oh, I was thinking maybe in the US or the North Sea, or different industries.

COLONEL DROVER:

A. Other nations.

MS. FAGAN:

Q. Nations.

COLONEL DROVER:

A. Each nation has their own SAR program catered to the specific needs of that particular nation. So it varies quite a bit, and offhand I can't report on a particular standby posture for a particular country, but most countries that I'm aware of that have a SAR capability have a standby posture that is manned, fully manned and fully responsive. I just don't

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know their times.

MS. FAGAN:

Q. But it does vary. This isn't unusual to have these postures?

COLONEL DROVER:

A. No, no.

MS. FAGAN:

Q. It's just they're not exactly the same everywhere you go?

COLONEL DROVER:

A. No.

MS. FAGAN:

Q. The next slide you have, I believe, is the secondary assets which you spoke of and where they're located. So if you could explain this slide, please?

COLONEL DROVER:

A. I introduced a couple of these aircraft when I spoke of the secondary aircraft that are available, and indeed I also went on to explain that any military aircraft can be called to service, and some are more suitable than others, if you will. Sea King, of course, as I mentioned earlier, is a very capable aircraft and that can be brought into SAR

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operations, as well the Aurora, we mentioned that, and the Griffon, which are in our support squadrons for this region, Goose Bay and Quebec.

MS. FAGAN:

Q. Now you then talked about your voluntary, and I believe this slide -- the next slide helps with the voluntary aspects, and could you explain this a little?

COLONEL DROVER:

A. Again I briefed you earlier today on our program, CASARA, where we sponsor an organization of volunteers and they provide a number of aircraft as well as spotters, and in the Atlantic area here, I'll just call up some numbers which depicts they have several aircraft here in St. John's, and a whole number of spotters. Deer Lake has some and then up in Wabush.

MS. FAGAN:

Q. So these spotters, in St. John's there's four aircraft and 49 spotters. How often, not necessarily St. John's, but how often would these assets be tasked or used? We had -- Gander had 90 missions in the last 11 -- you

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know, the first 11 months of '09. How often would you use the CASARA people?

COLONEL DROVER:

A. I don't have the statistics on that. It's not routine. If they -- they normally would participate in a SAR operation that involved a search phase. A lot of the ones that we described in Gander were a task mission either for medevac, which is categorized in there, or for a ship taking on water or that sort of thing. CASARA wouldn't be involved in those types of incidents, but -- so they don't get called into service all that much, but the notion that any time we would conduct search operations, say, in central Newfoundland, we have a pool of resources and they would be tasked to do that, and as I mentioned earlier, we do train on a frequent basis to keep those folks current as well.

MS. FAGAN:

Q. So are there spotters in Gander, and maybe you don't know this, because as I understand it, the spotter can be on the aircraft that are owned or operated by the volunteers, but you also on occasion use spotters, and maybe I'm

Page 159

wrong, civilian spotters to help?

COLONEL DROVER:

A. You've got it right.

MS. FAGAN:

Q. So are there spotters in the Gander area?

COLONEL DROVER:

A. We don't have a CASARA unit in Gander, but if we were undertaking search operations, I've got 49 here in St. John's, so we would just sort of assign as many as were available, and wherever we're locating our search operation from, they would be taken care of and they would be sort of integrated in our crews.

MS. FAGAN:

Q. Okay. Now you talked about leveraging assets and can you explain what this slide is? It's entitled the "Commercial Resources Known to JRCC".

COLONEL DROVER:

A. I can. As I perviously mentioned, the business of SAR involves more than just the federally assigned primary asset, and through the coordination that takes place at the RCCs, occasionally a commercial operator will be requested to provide some support for SAR

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operations. Part of the routine, if you will, at the RCCs, is they are regionally baaed and they're familiar with all the operators in the region that actually have a capacity and a capability that could render some assistance if required and when required. So they maintain, and as shown on this slide here, the types of organizations that would be involved, which include helicopter operations or with the Provincial Airlines, PAL, which happen to be the first aircraft that was on scene in the Cougar incident. So there are a number of assets out there. Depending on their location and their suitability and serviceability, they can be brought into search operations.

MS. FAGAN:

Q. So on this slide, for example, you have Universal Helicopters and Canadian Helicopters and Cougar Helicopters. They're all commercial operators, as I understand it. How does JRCC get the information on them as to how many helicopters they have or what type of helicopters? I mean, how do you gather that information?

COLONEL DROVER:

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

MS. FAGAN:

Q. Does JRCC know what Cougar Helicopters' capabilities are?

COLONEL DROVER:

A. They do.

MS. FAGAN:

Q. And when a new oil rig begins drilling -- I

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

COLONEL DROVER:

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

MS. FAGAN:

Q. Okay. Now we have had presentations here, and it's clear that when it comes to regulating the production offshore, it is regulated

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

COLONEL DROVER:

A. As far as I know, there is no established, at the policy level or headquarters level, any interface between the organization and the federal departments that are involved in search and rescue. As I described, at the -- what I refer to as the tactical level, there is that constant exchange of information and cooperation, but at the -- in terms of getting involved in locations and things like that, I'm not aware and I certainly haven't been personally involved.

MS. FAGAN:

Q. Okay. DND knows what Cougar Helicopters and some of the other providers are capable of. Does DND provide any oversight of search and rescue -- like Cougar Helicopters is contracted to provide first response to the oil operators. They're to conduct medevacs.

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

COLONEL DROVER:

A. No, there is no oversight provided by CF.

MS. FAGAN:

Q. Okay, and does CF conduct any audits of Cougar Helicopters' search and rescue capabilities?

COLONEL DROVER:

A. No, we do not.

MS. FAGAN:

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

COLONEL DROVER:

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

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and rescue incident and it's done on a time line, and there are a number of points I'd like to make, so I'll just sort of walk through with those that have this up on their view, from incident occurrence to the evacuation and the resolution of the incident itself, and you'll see, first of all, on the chart, two zero times. It's a system, I call it point of vulnerability, and then there's a zero a little further along to the right.

An incident occurs at some time. The very critical phase to a whole search and rescue operation is alerting or notification, because until the SAR forces are aware that there's an incident has taken place, there's obviously no way that a proper response can be mounted. Earlier, I mentioned about the beacons, the 406 EPIRBs and ELTS. If, for instance, an aircraft were to crash land, activating its ELT, through the satellite technology, we get near real time report of an occurrence and a location that could be as refined as five kilometres, but may be larger than that, but it becomes refined with subsequent passes of the satellite. This is

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enough information to take the first zero and the second zero and in a matter of minutes, we're into the next phase and the next phase being we have started a SAR case and we've taken some directed actions to come up with a SAR response.

But not all cases will be that quickly reported. If an aircraft were in contact with traffic services, air traffic control, declared an emergency and subsequently dropped off the radar, for instance, that would be reported very quickly to RCC and that would initiate a SAR case. As I mentioned this morning, sometimes it's not that quickly reported. Ships at sea have mandatory reporting times. If they do not report, there are sort of times where they can be overdue before we alert the SAR system. Aircraft that operate without flight plans may actually be operating and not informing anybody that they're in remote areas flying around, get into trouble, and if they don't have a beacon, it may not be reported until next of kin calls in, a concerned citizen we call it, so all that to say this alerting phase could be a

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matter of minutes or days, but it's very, very critical to the outcome of a search and rescue event.

Once the rescue coordinating centre gets a confirmation that there is an incident, then the response, the reaction takes place, which is part of the response. The first decision point that the RCC will make is to determine how to respond, in terms of what assets to respond to. In a marine incident, as I described this morning, they have all the databases to determine where the vessels are and those include, of course, where the Coast Guard actually dedicated SAR vessels are. So they'll look at the location of the incident, assuming that's well known, and look at where those ships are. They may actually direct ships to go to the crash site, and similarly, they will look at where this location is relative to where our SAR air forces are and launch accordingly. So they may, if it's an east coast event, use Greenwood, Gander or a combination of both. You can never overtask, especially initially when you don't really have a full knowledge base of what you're

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dealing with. So if there's some doubt as to the size of the incident that you're responding to, then you would probably launch more aircraft. You can always stand down those aircraft. So it's very important to mobilize those assets as quickly as possible.

Once those units are tasked, we'll stick with the air dedicated SAR here for a moment, to ease the description, the crews muster and they get on their way as quickly as they can.

A little later actually, the last part of my presentation, I'll talk about the sequence of events that takes place in the squadron from the time that they get the call to the time that they dispatch and get on.

The next phase that we need to talk about is the transit and this can be a very straightforward exercise or it can be a little complicated and it really depends on the distance that the assets have to travel relative to the base and the incident site, and whether or not, for instance, the helicopter, if we're talking helicopters, have the range to be able to go to the incident site, spend the time to execute the recovery

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and return to a land base or sometimes a rig for refuelling and then return, or whether or not they need to refuel on the outbound, which -- so those dynamics go into this transit time.

Mentioned this morning about the Hercules and its capacities and capabilities. Generally speaking, because of its endurance and range, within most areas that we would dispatch a helicopter, the Hercules can go direct there and it sets up that dynamic that we talked about, about the on-scene commander, site reports, reporting of what is taking place. Meanwhile, the helicopter is on route and transit.

Not always, depending on when and how the notification of an incident occurs, do we know the precise location. If we don't know the precise -- in other words, an example where an aircraft failed to arrive at the airport, and the last report of that aircraft was probably 30 minutes flying time from that airport, so he hasn't been heard of for 30 minutes, and you can look at the speed that aircraft is travelling, say 200 knots. That's a lot of

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territory where potentially that aircraft could be. So, and if there's no beacon and other ways of locating that aircraft, that really drives to the search phase, and the search phase can be fairly quick or could take a long time.

If there's a suspicion that there is a search phase involved, so in other words the initial reporting that the rescue centre got was not fairly precise, in terms of where the location is, that really dictates the launch of additional assets. So you want to get as many aircraft that that area can take that you have available to do the search with a multi-aircraft sort of capability.

Eventually, when the location is found or when it was reported, the rest of the part of the time dynamic is involved in getting the proper resource to effect the rescue. I mentioned our capability in terms of the Hercules being able to dispatch SAR techs and equipment and tents and all the survival type things that you'd need over land. Over water, with the life rafts and things. If the helicopter is not yet on scene, part of that

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rescue activity actually takes place with a fixed wing airplane delivering all those provisions, as well as the SAR techs, to the scene to prepare for the eventual arrival of the helicopter. Generally speaking, a helicopter is the aircraft that is to perform the rescue, unless if it's a marine incident and there is an able ship that actually can take people out of the water, as an example. If they're not injured, they may stay there. Injuries, we could do a water transfer to a ship and then we'd transfer with the helicopter to the helicopter from the ship and bring them to a medical facility.

So that is a time line. Each SAR event is different, so you can show a graph, but the times are variable, depending on the nature of the incident and how it's reported.

MS. FAGAN:

Q. Okay, thank you. Who communicates with whom on this? You mentioned your SAR techs and this procedure. Who is speaking to whom and in particular, when do aircraft operators or pilots have to report their problems to JRCC?

COLONEL DROVER:

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A. Okay. Generally speaking, JRCC are not in direct communication with aviators, with pilots. The pilots are communicating with air traffic services. NAV Can is responsible in Canada, but it's air traffic control agencies. They would declare any anomalies, any emergencies to ATC, the pilots, and ATC will duly inform RCC if there's any concern that there's a problem. Another example is if that aircraft is in radar contact with air traffic control and they lose contact, and that generally indicates that the aircraft has gone below a radar altitude, which means he's deviated from his flight plan. That's good enough for the ATC services to notify air traffic or RCC and again, we institute the recovery action accordingly.

MS. FAGAN:

Q. So it's air traffic control is the ATC?

COLONEL DROVER:

A. Correct.

MS. FAGAN:

Q. That's what ATC is. So that's who the pilot's talking to.

COLONEL DROVER:

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A. Correct.
MS. FAGAN:
Q. They lose track of the pilot or communication or contact, then it's the air traffic control that contacts JRCC?
COLONEL DROVER:
A. Correct. That's correct.
MS. FAGAN:
Q. We have heard that when night flights are taking place, and it's very rare, according to the presentations to date, but there are night flights taking place when -- for some of the workers travelling offshore, and one of the procedures that have been put in place is that before a Cougar helicopter flies passengers to the oil rigs at night, Cougar Helicopters will contact the 103 Squadron, which is the rescue squadron in Gander, to determine the availability of SAR. That's what's been presented as one of the procedures put in place before a night flight is taken, and are you aware of this procedure, and if so, does this procedure change DND's posture at 103 in Gander basically?
COLONEL DROVER:

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A. It's a normal occurrence that Cougar air crew would contact the folks at Gander and inform them their intention of night flying, that it's taking place and there's a lot of communication that apparently takes place between the squadron and Cougar. Whether or not it changes the posture, it does not, and the reason being, the -- we do not change our posture depending on what Cougar's flight activities are. Our SAR aircraft is based in Gander and is to service the whole region. The types of incidents that we talked about, including maritime and land based. That is the constituency, if you will. So even though, if Cougar learns that the aircraft is indeed in Gander, it does not necessarily mean it's going to stay in Gander. So if there's a SAR tasking that takes place during night operations of Cougar, that aircraft may well go farther away from Gander or it could go to St. John's, could go anywhere, if there were SAR tasking. So really, it doesn't change the posture in Gander.
MS. FAGAN:
Q. Okay. So at the moment of the phone call,

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they'll know what the status is in Gander?
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. But after the phone call -
COLONEL DROVER:
A. It's dependant -
MS. FAGAN:
Q. - the squadron could be tasked to a mission?
COLONEL DROVER:
A. That's correct.
MS. FAGAN:
Q. Okay. You went through, and I believe we probably covered this, but just there's a couple of other questions leading from it, and it has to do with the medevacs off the oil rigs, and as I understand it, JRCC does not control or coordinate a routine medevac that Cougar might conduct off an oil rig.
COLONEL DROVER:
A. That's correct.
MS. FAGAN:
Q. Okay. Could you describe the procedure when JRCC asks Cougar to standby or assist in a non-offshore oil emergency? Because as we

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know, Cougar is contracted to provide first response to the oil companies and to their assets. Does JRCC ever call Cougar to assist, you know, leveraging those assets? Do you ever try and leverage Cougar Helicopters to assist in a JRCC mission that's not related to the oil industry?
COLONEL DROVER:
A. Referring back to one of the slides I showed where those commercial assets are in Atlantic Canada, any of those commercial assets could be brought into or requested to provide some SAR services. This is basically done on a request from RCC and is normally compensated for. So in other words, we're renting or contracting their services. In the case of Cougar, there are -- there have been some examples where Cougar may be better positioned to provide a first response, not part of their contracted responsibility which is for the rigs, and to my awareness, there was none in '09. I think in '08, we had one case where we actually engaged Cougar aircraft to perform a SAR mission for us.
MS. FAGAN:

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Q. Okay. So would an example be JRCC may ask Cougar to assist with a distress, with, you know, a call on a fishing vessel? I mean, Cougar is not contracted by the oil companies to help fishing vessels, but JRCC would take that area?

COLONEL DROVER:

A. That's correct, and if a situation that you describe, if it's one where our rescue response would be longer than what Cougar was able to provide, then we may make the request to Cougar. Now they certainly have the right to decline for a number of reasons, but we -- that's normal procedure, not only Cougar, but to any of those commercial operators that are out there that may be better suited to respond to an incident.

MS. FAGAN:

Q. We have heard or at least I've heard that JRCC can task any aircraft or any vessel, if it's in the air or at sea, as long as safety is not in jeopardy and there appears to be a mixed view. Is it voluntary? Is it different if they're in the air or at sea than if they're in port and on a tarmac? I mean, what's your

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authority to task vessels?

COLONEL DROVER:

A. Yeah, it's -- what we're talking about here is the Canadian Shipping Act, which requires mariners to go to the aid of mariners in distress. That's one sort of step. It also applies to aircraft, but it's not very applicable to aircraft because, generally speaking, there's little that an aircraft can render, the exception being probably a helicopter that's conveniently located. If the vessels are not in the immediate area, then it's not practical that they would be included. So it's usually focused on those vessels that can actually get to the scene in relatively -- faster than your SAR resources to render assistance and that's legally binding.

MS. FAGAN:

Q. So you could order, if there was a vessel perhaps part of the Coast Guard Auxiliary and they were very, very close to an emergency, you could order that vessel to render assistance?

COLONEL DROVER:

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A. That is correct.

MS. FAGAN:

Q. But if that vessel was tied up at a wharf, it would be a voluntary request?

COLONEL DROVER:

A. Only because it's not a practical solution. The time it could arrive on scene would not be beneficial, because it would be more asset. So it really is focused on those vessels that actually can render assistance before our SAR forces, and that -- when I say SAR forces, that certainly includes Coast Guard capabilities, so all Federal vessels.

MS. FAGAN:

Q. Thank you. Now the next section is reports and returns and I understand that you do keep and prepare a number of reports. Could you explain what those reports -- the types of reports that are made?

COLONEL DROVER:

A. I can, and one thing I probably didn't mention when we were looking at the RCC centres themselves, but the recording of conversations and information that come over telexes and telephones, that's all captured as part of the

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record. So it's all operational information passage is recorded.

MS. FAGAN:

Q. Everything is recorded as in tape recorded?

COLONEL DROVER:

A. Tape recorded if it's voice and data recorded for the -- and they're archived and kept for whatever legal time frame they're required. There are a series of reports that are included. Every time we have a SAR incident, they start a SAR case file and they maintain a log. So that really is the order of all the communications, the vessels tasked, the information reporting that those had achieved. And if the -- if you have open cases, we do Sit Reps, situation reports, and those are usually on a daily basis, and those are basically updates, what has transpired, the plan for the ensuing hours.

When an aircraft goes missing, there's a missing aircraft notification and these are part of the pre-flight requirements is to check those types of messages. So it alerts all the operators in that area that there's an overdue and a missing aircraft. So if they

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hear an emergency beacon on their radios, they can report that. So it's another report that's out there.

Briefing task form, so it's just a capture of when the RCC tasks an agency. They just capture when it happened, what they were tasked to do as part of their record keeping.

SAR mission reports, this is at the squadron level where if an aircraft was tasked for a SAR mission, they used SAR equipment, deployed their SAR techs, we'd write a report on that, and daily sums. So each day, for instance, I see all the SAR activity in the whole country and so some days there are none. Yesterday, there was one. Four days ago, there were four. So those are the daily summaries.

And the one I didn't mention, but there have been some specific questions, so I'll address it separately. It's a SAR operations report. This is not a required report under most circumstances for all those incidents that are reported, the 8,000 across the nation. There are not 8,000 SAR operation reports. They're by exception as opposed to

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an expected report at the end of a SAR case, if you will.

Normally if a SAR operation extends beyond four days, it requires a SAR report, operations report. If the commander assesses it as sensitive in some area, either anomalies took place during the SAR operation that need to be captured and reported, he can order one up, or indeed any special cases can be directed by any level of chain in NDHQ to ask for a report. The report itself captures the incident, how it was responded and all the resources that were applied to it, and it's really focused and the whole purpose is if there were some anomalies, some difficulties, some challenges, some procedures that didn't work as expected or could be improved on or reported, it's to capture those so that we can derive some changes, lessons learned, those sorts of things. Also, it can be served to use the investigation board, the information collected in these reports to assist in an investigation and subsequent their investigation.

MS. FAGAN:

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Q. When Mr. Harris spoke to the Inquiry, he tendered a Search and Rescue Operations report for the maritime incident which involved the fishing vessel, "Acadian II" and it was an incident over March 28th and March 29th. Would that be an example of a SAR Ops report?

COLONEL DROVER:

A. Yes, it would.

MS. FAGAN:

Q. Okay, and was a SAR Ops Report prepared after Flight 491 on March 12th, 2009?

COLONEL DROVER:

A. No, there was not.

MS. FAGAN:

Q. And why wasn't a SAR Ops Report prepared for that incident?

COLONEL DROVER:

A. Essentially it was shorter than 4 days, for sure, but if you look at that operation from a SAR response perspective, actually it was a response that was part of expected planned execution. There are no difficulties from a SAR perspective in how that mission was conducted, so there was really no need to go and do an Ops report.

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MS. FAGAN:

Q. Now you said that you would give us a break down of the rhythm of how a SAR crew would function for a mission and I believe that's what's in your next few slides, so unless you have further comment on the reports, the reporting aspect, I'd ask you to move into this section.

COLONEL DROVER:

A. Okay. Thank you, I have, again, this is sort of some of the activities that you will see take place during the launch and that timeline that I briefed on in an operation, a SAR operation. There's a lot of words in the next few slides and I'll go through briefly or quickly because I think we sort of touched on the highlights here. First of all, let me just explain life on the squadron, if you will, so you always got a crew on SAR standby duty and always a crew waiting to come on duty, so today the crew that stands down at 4:00, they hand off the pager to the 4:00 crew, so it's a continuous operation, it's no different than any sort of 24 and 7 manned operation. The crews that rest at home

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

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in the north, so they continue to use a helicopter to continue the rescue operations, so it's kind of staging a crew. It doesn't often happen, but again it's one of the capabilities that our system has to be able to modify the posture, if you will, to be able to continue to deploy that helicopter to render that search and rescue assistance. Always at the squadron, the focus is on making sure that the aircraft is fully mission capable and ready for flight, as we discussed earlier, and there's a constant requirement, of course, of having enough trained crews on your squadron to be able to sustain an intense search operation as well.

The notification, we talked about that timeline chart, come from a variety of sources. RCC really is the data central, those agencies now are getting as much information as they can about where the occurrence may take place. What they did, the first initial step before they even get seriously collecting data is task the squadron, so if it's Gander we're talking about, they just pick up the Hot Line and tell

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

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

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

MS. FAGAN:

Q. Now it says here that air traffic control requires 30 minutes notice. If you're in the air in 25 minutes, I guess the air traffic controller takes shorter notice?

COLONEL DROVER:

A. Absolutely.

MS. FAGAN:

Q. There must be an exception.

COLONEL DROVER:

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

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

MS. FAGAN:

Q. Air traffic control won't hold you up.

COLONEL DROVER:

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

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

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

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

MS. FAGAN:

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

COMMISSIONER:

Q. We'll take our break now.

(RECESS)

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MS. FAGAN:

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

COLONEL DROVER:

A. Okay, so to sum up where we've taken the presentation is basically speaking the various inputs, if you will, into the SAR dynamic that speaks to a responsible and prepared public and sufficient and capable resources, public, private and commercial to respond if and when a SAR operation is required. So, that takes us to -

MS. FAGAN:

Q. Questions.

COLONEL DROVER:

A. Questions.

MS. FAGAN:

Q. Although this Inquiry is now investigating the March 12th incident, JRCC was involved in co-

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

COLONEL DROVER:

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

MS. FAGAN:

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

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10:00? Because we're in Halifax.

COLONEL DROVER:

A. Right, it was three hours, I believe.

MS. FAGAN:

Q. Three hours, but somewhere -

COLONEL DROVER:

A. Yeah.

MS. FAGAN:

Q. Well, if somebody is listening to this and they hear 12 noon -

COLONEL DROVER:

A. No, it was earlier than that, it was about 9, right.

MS. FAGAN:

Q. So these times start at 12 and go on, but that's not Halifax local time and Newfoundland -

COLONEL DROVER:

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

MS. FAGAN:

Q. So it was Air Traffic Control?

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

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

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

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

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COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. Has anything else arrived? We know there's two Hercs, four Cormorants and Cougar helicopters en route.
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. So the second aircraft would be the Aurora?
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. Okay. So now, take us through what happens. We got Speed Air and the Aurora. What happens next?
COLONEL DROVER:
A. So the next and significant event, helicopter to arrive on scene at 13:25 is Cougar 61 call sign and they arrive on scene and that was the aircraft that actually did the ultimate rescue and returned to St. John's. About 15 minutes later, 13:34, the first Hercules arrived on the scene. They, at that juncture, took over on-scene commander duties, not that the Aurora

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was not qualified to do that, but the Herc is a SAR aircraft and probably a little bit more familiar with SAR procedures, and the Aurora did stay on scene for a while, but the Herc so is now the first SAR aircraft, first military SAR aircraft that was at the scene. And at 13:40, a second Cougar helicopter, call sign 62, arrived on scene.

So we had helos that are working actually around the incident site and we had top cover in the form of a Hercules and an Aurora. At some point, and I don't have the time, the Speed Air aircraft, the first one on scene, was released. There was no other need for that aircraft to employed. There's nothing that he could provide that wasn't available through our fixed wing aircraft.

MS. FAGAN:
Q. So would it be the on-scene commander who would make the decision or release the Speed Air?
COLONEL DROVER:
A. Yes, absolutely.
MS. FAGAN:
Q. Okay.

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COLONEL DROVER:
A. Okay, and at 14:20, a second Hercules aircraft arrived on scene. So now we have our two Hercules on scene, and at 14:25, a significant time, there's a lot of things that take place between these but these are the significant events, that Cougar departs for St. John's.
MS. FAGAN:
Q. So 14:20?
COLONEL DROVER:
A. 25.
MS. FAGAN:
Q. 25, so that would be the Cougar 61?
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. The first Cougar that arrived which did retrieve Mr. Decker, that would be the time it left the scene?
COLONEL DROVER:
A. That's correct.
MS. FAGAN:
Q. Okay, and finally at 14:28, both Cormorants, our first two Cormorants arrived on scene. So that was two hours after the initial incident

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that we had at least two of our SAR aircraft and two of our Hercules. So we had four primary SAR aircraft on scene at that juncture. That's as far as I've taken the extract from the log, and I probably can't give you too much more detail on the incident itself, from what I have available at this time. Does that answer your question?

MS. FAGAN:
Q. So yes, and without the precise time, you did mention that there were four Cormorants. Did the other -- do you know if the other two did arrive on the scene, and eventually, it would have been the on-scene commander who released all of the aircraft? Because we have the Cougar 61 has returned to St. John's with the survivor.
COLONEL DROVER:
A. Correct.
MS. FAGAN:
Q. The Cougar 62 would be on scene and two Cormorants on scene and two Hercs. So there would be two more Cormorants and they would have just continued with the rescue?
COLONEL DROVER:

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

MS. FAGAN:

Q. Okay. Now do you know if there's been any assessments done of the Canadian Search and Rescue program or our program -- you've just discussed what the Department of Defence does and do you know if there's been any comparisons or assessments? I mean, how do we

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

COLONEL DROVER:

A. Again, as a signatory to some of those conventions that I mentioned earlier, we maintain certain obligations in the provision of SAR, including our search and rescue centres. So we do participate and we maintain the same standards as other cooperating and participating nations and SAR delivery in general. There was a report done in 2008 by our internal auditing review services within our department and it did explore a little bit of what other nations' programs entail, and they did report that our system, including the search and rescue coordinating centres, stands up as a model in many nations' programs. So it's a highly respected structure that we have in place and very robust.

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

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quality, capable program.

MS. FAGAN:

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

COLONEL DROVER:

A. Right, yeah, this -

MS. FAGAN:

Q. So could you explain a little bit about this video, what we can see?

COLONEL DROVER:

A. Yeah, it's just a sequence of SAR sort of events that you might encounter. Again, it's not real operations. It's just a training exercise, I believe, although there's some challenging weather conditions and a short run and if you can run the film there and I can talk to you after to answer any questions, if there are.

MS. FAGAN:

Q. Okay. Well, we'll play it and then we can have a discussion. It's only a minute.

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(VIDEO PLAYED)

COLONEL DROVER:

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

MS. FAGAN:

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

COLONEL DROVER:

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

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sure I'll get an opportunity to answer those questions in the next little while.

MS. FAGAN:

Q. Commissioner, a number of counsel have indicated during the break that Colonel Drover's presentation has been very informative and there's an awful lot of information here, and if it is acceptable, they would prefer to start the questioning tomorrow morning, after they've had a chance to organize their thoughts and review all the information. It would likely flow in a little more structured way tomorrow.

COMMISSIONER:

Q. Well, I'm not surprised. It has been a -- there has been a lot of information, and I must say, Colonel Drover, I thank you for it, because it gives me a much better idea how a search and rescue operation works, and what is behind the operation to make it possible, and that's valuable. So thank you.

Yes, if that's the feeling, I certainly have no objection and we'd start then tomorrow morning at 9:30.

MS. FAGAN:

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Q. Thank you.

COMMISSIONER:

Q. Thank you.

ADJOURNED AT 4:00 P.M.

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CERTIFICATE

We, the undersigned, do hereby certify that the foregoing is a true and correct transcript of a hearing heard on the 27th day of January, 2010 at Tara Place, 31 Peet Street, Suite 213, St. John's Newfoundland and Labrador and was transcribed by us to the best of our ability by means of a sound apparatus.

Dated at St. John's, NL this 27th day of January, 2010

Cindy Sooley
Discoveries Unlimited Inc.

Judy Moss
Discoveries Unlimited Inc.

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