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Chair

Mr. Merv Tweed

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● (0850)

[*English*]

The Chair (Mr. Merv Tweed (Brandon—Souris, CPC)): Good morning, and welcome, everyone, to the Standing Committee on Transport, Infrastructure and Communities meeting number 35. Pursuant to Standing Order 108(2), we are studying innovative transportation technologies.

Joining us today are witnesses from ISO Polar, Mr. Barry Prentice, the president; from Moose Cree First Nation, Guy Ginter, acting director, impact and benefit agreement; and from Livingstone Range Consulting Services, Stuart Russell.

For the committee's information, Mr. Ginter is going to present first. He's going to talk about some of the challenges, and then I suspect Dr. Prentice is going to offer some of the solutions.

I'll open the floor to Mr. Ginter for ten minutes, and hopefully we'll squeeze you in. I'll give you a one-minute notice so that you're aware of the timeframe, and then we'll move to questions from committee.

Please proceed.

Mr. Guy S. Ginter (Acting Director, Impact and Benefit Agreement, Moose Cree First Nation): I would like to begin by saying thank you very much for the opportunity to present to you today.

I will get directly into it. My objective is to provide you with context as to what is going on in northern Ontario.

The Chair: Mr. Ginter, I may have to ask you to sit, just simply so your microphone can pick you up.

Mr. Guy S. Ginter: As you can see by the slide that's in front of you, that's the James Bay coast. The area I'm from is the Moosonee and Moose Factory area, which is in the bottom left. As you can see by the map, that's the area I'm most concerned about, although the issues we're to speak to today are very much common to most, if not all, of northern Canada.

First, the history of the James Bay ice road. In the 1940s an ice road was established to support the mid-Canada radar sites. Subsequently it served the local communities of Moose Factory, Moosonee, Fort Albany, Kashechewan, and Attawapiskat from the 1950s to the 1990s. The original ice road was abandoned in favour of a parallel ice road situated closer to the James Bay shoreline. With the discovery of diamonds on the Attawapiskat River watershed, the ice road status expanded from the local to serve the industrial environment, specifically the Victor Mine, operated by De Beers Canada.

There are transportation gaps. Access to the region starts by driving to Cochrane, then by rail to Moosonee, then back on a truck by ice road from Mosoonee to Attawapiskat. The De Beers Victor Mine is connected to Attawapiskat by an ice road along the south side of the Attawapiskat River. During the non-ice-road period, the remote communities and the mine are accessible only by light aircraft. I should qualify that. Depending upon the circumstances of the season and the situation, there are also barges. There are between 15 and 20 of those on an annual basis, but they're very much subject to weather.

The maps that you see in front of you are the two roads. The left picture shows the south road from Attawapiskat to the De Beers Victor Mine. As you can see, that's 103 kilometres, and the James Bay road from Moosonee to Attawapiskat is approximately 301 kilometres.

The ice road season construction begins in December, weather permitting. Of course we haven't had that luxury in the last several years. The commercial opening is usually around the first week of February. Traditionally, the commercial access is about 30 days and the community access is about 60 days. Unfortunately, this year the commercial side of things was about 25 days and the community access I don't think was more than 35 days. With all that's going on, it was a substantially reduced season this year.

As you can see by the picture here, the road is built to an ice thickness of 43 inches; however, depending on the cargo needs, it can be built up to 60 inches in thickness. The reason for that is the 43 inches gives us the capacity to move approximately 100,000 pounds of material in a given truck. As you can see here, a 43-inch road will support 106,000 pounds.

Now, if you notice this particular picture, the trees are still fairly tall here. However, I would suggest to you that even though they seem very tall, this is the southern portion of the road. These trees can be upwards of 300 years of age. Even though they don't appear to be that tall, relatively speaking they are tall.

This is the Long Creek crossing. Commercial activity to the mine is between 400 and 450 loads. De Beers takes delivery of between seven million and ten million litres of fuel annually.

One of the challenges we're faced with, of course, is spring thaw. With spring thaw, the challenge of the road is that it results in significant flooding. Further to that, of course, the cost of the ice road is around $5 million. That's just the cost of the ice road itself. The entire program for De Beers is approximately $12 million annually. The federal contribution towards this is just under $1 million. As you can tell, it is very expensive. Those are annual costs I was referring to. You can see by this picture that this is typical of the ice jams that occur.

● (0855)

Depending upon the coldness of the season, there are a number of dangers to the environment. One is that the fish are impacted and the harvesting is impacted because the complete dam doesn't allow for the fish to actually go underneath the ice. We have a lot of environmental issues to deal with, which in turn result in impact to the harvesters.

This is an annual event. The White Swan Creek area is probably the worst. We annually do an environmental impact study. Our current one should be out very shortly. As you can see by this aerial view, it has a significant impact on the whole area. Not only is the road there—it's hard to tell by this picture—but there is also the power line that goes through that feeds the northern communities.

This is the North Bluff Creek Crossin. As you can see, it looks like you have a bend in the river there. That's not a bend in the river. That's actually the river and the road, and you can see the water on the road, which is the line that goes across vertically. The ice roads have a significant negative impact on harvesters and wildlife as a result of what goes on there.

This is the south ice road by Attawapiskat. The shorter lifespans of ice roads because of the climate change is making life more difficult for the people in the north. This particular picture is closer to Attawapiskat and is the actual start of the south road going to Victor Mine. You can see the trees are significantly shorter. And of course it's all muskeg, and it's very difficult to work and build in this particular area.

I'll turn to economic disparity. For approximately 305 days a year the communities are fly-in only. Fresh food must come in on a plane, which adds significantly to the cost. The cost to live in the communities due to transportation can be between 100% and 300% higher. The costs for a return airfare, as an example, from Moosonee to Timmins is approximately $900. If you're a resident of Moosonee and Moose Factory, you also have access to the train, which is a little bit less expensive, but as you know by what's going on, we don't know the future of the rail going to Moosonee. A return ticket to Attawapiskat is about $1,380. Of course that's a significant and very difficult cost to those up north. Typically they do not have the resources to do this very often.

The slide here shows the prices in one particular example. This is actually an example from Manitoba, but it does illustrate the situation there. You can see that the basket at St. Theresa Point is about $65.54 for those various items, whereas in Winnipeg it's $27.49. I would suggest to you that in Ontario the price would be closer to $80 in Attawapiskat.

The challenges that are faced include bad diets, bad housing, and bad outcomes. You can see by these pictures that diet is an issue, access to resources is always going to be a challenge, and whenever there's need for specialty things, of course, you must come out of the community. There is significant cost to moving people from the communities to larger centres to get the services necessary.

The crisis is ongoing. Like too many remote communities, Attawapiskat has serious schooling and housing issues. Even if money were readily available, the logistics of a response are limited by the window of opportunity to bring in bulk supplies for construction. Add the exceedingly high cost to bring in bulk materials, and a difficult problem has only expensive solutions.

Our motivation for speaking with you today is that we see airships as the game changer that could have many positive benefits for northern Canada, not only to the James Bay area, where I'm from.

● (0900)

The Chair: Thank you. You are well under ten minutes.

Mr. Prentice, the solution.

Dr. Barry Prentice (President, ISO Polar): Thank you very much to everyone for having us come.

I want to talk a bit about airships, give you some background on the technology and how it's evolving, and give you some comments on why we are where we are today.

To begin, I'm going to outline the need for a game changer, the technological opportunity, and the obstacles to commercialization. Finally, I'll give you some recommendations, which is what we've been asked to give to this committee.

This is a map I always like to show on the limit of the roads in Canada. Most Canadians haven't had much experience north of that red line, but 70% of our land mass lies above that red line, and there are no roads. So we have limited access to almost three-quarters of our country, and of course things aren't getting better with climate change, as you'll see in a moment.

There are challenges for the north in terms of transportation. The distances are vast. A three-hour trip north of Winnipeg still just gets you to what would be considered the southern Arctic by the people who live there. If you can get to Iqaluit, there is still a lot of Canada north of that.

The services are generally seasonal, especially marine and land services, like the ice roads. The freight rates are very high. There are thin markets. There isn't much traffic. There's very little coming back, so you have to pay for a round trip. Of course we live with harsh climate conditions, with permafrost to try to build on. So we have a real challenge for transportation in the north.

Solutions include ships, barges, trucks, airplanes, and helicopters. We use everything we can. One of the solutions we see for the future is to use airships. In the chart they're ranked in the order of cost as well, at least the top ones.

I always like to start with the airplanes, because this is the only way you can get to all parts of Canada 365 days a year. You can see various systems there. The airplane at the top on the left is landing on an ice runway. The Buffalo airplane you see was built before I was born, and it's still working. It's nice to see things older than me that are still working.

You can see the doors on the one on the right. I always like to put that slide in because it reminds me to mention that you cannot get things into an airplane that you can't get through the door. That was a special customized door put in for a Wasaya Airways airplane. What was the exotic cargo they were carrying? Plywood. One of the big problems is getting building materials to the north, and that's why that was changed.

Of course you've heard about ice roads. This is how we try to get to resource developments and serve our remote communities. I think there are 107 of them in total in this country. Not all of them are served by ice roads, but a good number are dependent on them. It's a very challenging terrain to get across, and the melting ice makes things more difficult. Some of you may have seen the *Ice Road Truckers* show. Those ice roads are like the 401. This photo is more typical of the kinds of ice roads we see in many parts of the country.

Marine transport is very good if you can use it on the coast, where you have barges. But there are also challenges that face people in the marine industry: how many trips they can do a year, how much they can carry, and what communities they can serve. By and large we have no harbours in most of these communities. Goods are offloaded onto barges, and then it's catch as catch can to get materials in.

Of interest to this committee is the question of the melting north and climate change. I know the Prime Minister has talked about this, and certainly our government has had more interest in what has been going on with the north as climate change is starting to open up potential Arctic shipping routes.

This picture on the right shows what people believe will be the case within as little as 20 years, when we might actually have cargo going right across the Arctic Ocean in the summertime. That will certainly raise challenges for shipping through this area.

● (0905)

What happens if we have an accident and we have to have an oil spill cleanup? How do we get materials there? We really don't have a good system to do that. Also, of course, how do we defend our sovereignty in the north when it's very hard to get things there? We think that the airships provide a solution to that problem, as well.

I'll give you a quick capsulization of over 300 years of history. Buoyant flight goes back a long time, way before fixed-wing aircraft. It has achieved many firsts, and some things that have yet to be equalled. Large Zeppelins were cruising across the Atlantic from Germany to the United States and from Germany to Brazil. They were neck-in-neck with airplanes in the 1930s in the contest to determine which was going to be the main mode of passenger transport.

What happened along the way, of course, was the Second World War. A huge amount of investment went into building airplanes. There were roughly half a million airplanes built in that five-year period. By the end of the war, there were high-altitude bombers and jet engines. That technology was quickly moved over to civilian airliners, such as the Boeing 707 and others. Of course the Cold War stimulated more public investment in airplanes, and now we are where we are today, with huge advanced technology in fixed-wing aircraft.

The airships were basically left behind. The investment wasn't there. They were slower. People didn't see them as being safe, although they did before the war. They were safer. And who was going to invest in them to use them for what? There was no cargo service until the 1980s. There was always belly space in passenger jets, but no dedicated cargo space.

Today things have changed. Fuel is no longer inexpensive. The pollution and the carbon dioxide emissions are things we care about now. And of course we want to get places where we don't have infrastructure, such as runways. So now the interest in this technology that has basically been ignored for 65 or 75 years has returned.

These are some of the technological advances you can see. These are two Zeppelins. The one in the photo on the bottom was built in the 1930s. The one on the top was actually built in 2000. They look the same in terms of their shape, but they're completely different. There are new materials for the envelope. There is a carbon fibre frame in the Zeppelin at the top. There are vectoring engines. The one at the bottom needed 30 people to hold ropes. The one on the top can be landed with one person on the ground.

Great advances in technology have come along. This is a list of all those things that have changed that now make the airship a much more viable technology than it was in the 1930s. Everything that has advanced the airline industry can be used, and is being used, for airships as well.

There are examples of some of those changes. We have tail thrusters and vectoring engines that allow the control to land without anybody on the ground.

These are airships that are being developed. The three in the photos on the left and the two on the right are actually U.S. military projects. The U.S. government has invested roughly $1 billion in airships in the last 18 months. The photo on the top right is a U.S. Air Force airship called the Blue Devil. The one on the left is the LEMV, an airship the U.S. Army has invested in. And the one on the bottom right is a cargo airship developed by the U.S. Defense Department. These are all test devices that have been put in place.

The one on the bottom left is an all-aluminum airship being developed by the private sector in the U.K.

There are lots of new ideas coming forward in this industry. Some are using a traditional soft body and some are going back to the rigid form.

I have a list of airship companies around the world. There's another list, twice as long, of people who would like to be doing something.

Each one on this list has actually built and flown something or is in the process of testing a product, some of which are called hybrid vehicles. These are vehicles that take advantage of aerodynamic lift and are, in that case, actually heavier than air when they're starting out.

What are the obstacles to commercialization? This is what we really want to bring to the committee. Why is it that in Canada we don't have an airship industry?

● (0910)

Part of the reason is that we've never had an airship industry. We have no tradition of airships in this country. The Europeans built airships during the First World War, and before the Second World War the Americans had a navy blimp program. They have about nine usable hangars. In Canada we have no hangars to accommodate airships, and of course the difference between an airplane hangar and an airship hangar is the height of the door. You have to have a very tall door to get the airship in and out, but without a hangar you cannot have airships. They operate very much like dry docks. You don't need to use them every night; in fact they're seldom in a hangar, maybe ten days a year. But if you don't have a place to put an airship to maintain it or to do a safety check, you can't operate an airship. So one of the problems is we don't have any hangars in this country.

We have a lack of business confidence. The users look at this technology and say, “You know, I'm not sure. When it's there and it's available, I'll use it.” We hear that all the time from mining companies and others, but they're not certain that the technology will really work. Then when you talk to the developers of the airships, they say, “We know there are no technical challenges. This has been around for a long time, and we can do it. But is there a market?” So you have two sides of the supply and demand, which aren't necessarily meeting because of uncertainty. Of course everybody is waiting for somebody else to take a chance first, and if it's successful they'll follow. And of course if everybody does that, we never go anywhere.

There is a policy vacuum. I wish that the people in the policy branch in Transport Canada were more engaged in this idea, and were more engaged in the problems of the north we're looking for solutions for, but we've not been able to get any response from that group in terms of taking this topic seriously and investigating it, and actually finding out what is the truth and where does it stand.

Finally, we have regulatory gaps, some significant ones in terms of airships, because we have no history of airships. Therefore the regulations in simple things like pilot training.... To become an airship pilot in Canada, you have to actually get a hot-air balloon pilot licence, which doesn't seem to have much relevance to airships.

These are our recommendations on the last slide.

What we'd like to see is a policy statement on airships for northern transportation that indicates and sends a signal to industry that this is a topic the government is willing to take seriously and not block, and will help accommodate, the regulatory framework to actually enable airships to come forward. Within that regulatory framework, certainly we need a more reasoned way of licensing pilots. The current situation is not just very unhelpful, I think it's dangerous, because somebody who can fly a hot-air balloon is not going to be able to fly an airship and shouldn't try. We have no way of actually building large airships in this country in terms of the certificate of airworthiness, and of course the first company that actually goes forward to build one would have to pay for all the regulations to be put in place, which seems not just unfair, but it's a terrible burden and a restriction on anybody trying. It was not a barrier for the fixed-wing aircraft industry or helicopters, so why do we have this so that we are actually forcing the first airship builder to pay for those regulations?

Finally, I have two last points. The first is on redirection of financial resources. You've heard this morning about the ice roads. In the province of Manitoba, where I'm coming from, the amount spent on ice roads every year is $10 million. That comes from the federal treasury, and at the present time it's getting worse. As the ice roads last less time and they fail, we are relying on small airplanes to bring in all the needed goods. That bill comes to the federal government as well. Ontario has 50% more ice roads than Manitoba, so I expect that the bill there is 50% higher, and it's not getting better; if anything, it's getting worse, and it's going to continue to get worse as long as the trend of climate change continues in its current direction.

● (0915)

We would like to suggest a redirection of those funds. Rather than spending on ice roads year after year and seeing the benefits melt away every spring, if we put some investment into hangars and perhaps into a pilot program to demonstrate the airships and build that business confidence, the private sector will carry this away.

With that, Mr. Chairman, I'll stop.

The Chair: Thank you very much.

Mr. Angus, you have seven minutes.

Mr. Charlie Angus (Timmins—James Bay, NDP): Thank you.

This is a fascinating discussion. I think we'd all be in agreement that we need a game-changer for Canada's north. I'd like to start by looking at what we have in terms of resources on the ground.

Mr. Ginter, before we build airships to get to Attawapiskat, there has been a lot of talk about a permanent road, at least to Moosonee. We have Detour Lake Gold, which will be the largest gold mine in North America, crushing millions of tonnes of rock a year. We already have the road up to there.

Would it be wiser to put the money into a public-private partnership with the mines to get the road to Moosonee? Would that at least get the costs down? It's not going to get us to Attawapiskat, but having a permanent link road at least to James Bay, isn't that a first step?

Mr. Guy S. Ginter: It's hard to respond to say what the first or the second step should be. Let me suggest to you that any solution needs to be a combination of things. Having a permanent road to Moosonee certainly will help and certainly benefit Moosonee, but it still does not assist those mining industries that are working much farther north of there, and that includes the Ring of Fire.

Just as a side note, the Ring of Fire area is 80 kilometres west of the Victor Mine, so it's pretty close to the immediate area.

To answer your question, I think we need the road and I think we need other solutions, because the road is always going to be subject to weather, and certainly airships will provide the complete benefit to the northern communities and business.

Mr. Charlie Angus: I don't think it's an exaggeration to say that we have communities in permanent crisis. Kashechewan, Attawapiskat, Fort Albany are well known, and they are just in James Bay, not even going into northwestern Ontario. There's a lack of supplies, cost.

I love the idea of the airship, but we've been talking about putting in infrastructure, at least $2 million to $3 million per hangar, in each of these communities. The cost of building anything in Kashechewan is a million dollars plus. So to build a hangar to have those supplies in there, do we have private enterprise there now, or is this a pilot project strictly for government? Who's at the table with this project?

● (0920)

Dr. Barry Prentice: Permit me to answer, if I could. We don't build hangars everywhere. Hangars are like dry docks. You have a few of them located strategically around the country, and one hangar would serve 25 airships or more.

Going out to the community, most of the time the airships live in the sky. Some of them will need masts, which are relatively inexpensive. They need a cleared area, and in some of the designs they need no mast whatsoever, so the infrastructure cost is very low.

You would need a few hangars in a few places, that's true, but not in every community by any stretch of the imagination.

Let me follow up on the roads issue. While it is true that building roads with mining companies and others associated is a solution for some locations, it's not a solution for every community. In Manitoba alone we build 2,000 kilometres of ice roads every year, so to convert those to gravel roads at roughly a million dollars a kilometre would be $2 billion just for Manitoba, and more like $3 billion for Ontario. That wouldn't solve the problem farther north.

Beyond that, there is the issue of permafrost. Some of our existing infrastructure in the north is threatened right now. As the permafrost melts you get places where sinkholes are showing up on runways and on all-weather roads that exist in the north. The roads are not necessarily a solution.

Mr. Charlie Angus: I understand that. We can't say we'll just take money from roads and put it into airships, because those roads have to be there. The airships cannot replace—they could do phenomenally if we could get them up and running, but we'll still need to put that investment into roads. They're going to have to be there.

My concern with the ice roads is that we were down to 30 days commercial traffic this year. As seen in the last two to three years, it's been very difficult getting supplies in. I'm looking at how many supplies De Beers, for example, brings in. The freight containers that De Beers brings in that they have to leave until next season to bring out run for miles.

Have you had discussions with a company like De Beers or any of the other companies involved in the far northern infrastructure development that's happening to get them to the table on this? The price they're paying to get supplies in is exorbitant.

Mr. Guy S. Ginter: Let me make one comment, and I think Stu could also speak to that.

We've had some initial discussions, but nothing is formalized. In my conversations with the chief financial officer for De Beers Canada, he indicated there is significant interest. The practical annual cost for them to bring in supplies was in excess of almost 500 truckloads of materials this year. The cost is significant. One truckload there and back costs approximately $10,000, and that's roughly a five-hour or six-hour drive.

Mr. Charlie Angus: You talked about food costs. I'm interested in the community aspect, because this is where we see so much of the crisis that we're facing. It's $16 for a three-pound bag of apples in Attawapiskat and $15 for two pounds of meat.

Is it feasible, though, that we're going to actually be able to convert this into a reasonable cost, versus scheduled flights for Air Québec or Wasaya? Can the airship do it?

I could see the airship taking huge amounts of supplies into the Victor diamond mine or to the Ring of Fire, but are you going to be doing the milk run into Kashechewan and Fort Hope? Have you costed what that would be in comparison to cargo flights?

Dr. Barry Prentice: Yes, I have. We've done work on that.

Mr. Charlie Angus: Could you give us those numbers?

Dr. Barry Prentice: Yes. We found that it depends on the size of the airship. The bigger they get, the better they are, of course, because you have less fixed cost relative to what you're moving. An airship with 30 tonnes of lift—and the ones that are being planned are between 20 and 50 tonnes of lift.... A 50-tonne lift would be cheaper than the ice roads. That's less expensive than just the trucks on the ice roads, not the building and maintenance of the ice roads.

The other aspect that is sometimes ignored is the year-round cost. If you are bringing supplies in and you have to store them for 11 months, then you have a large inventory cost, and of course things can get damaged.

As well, there's the problem of things not arriving and the house is delayed for a full year. Certainly in some cases we see that goods arrive on an ice road, but they get dropped off in the snow because there's no place to put them. Kitchen cupboards, windows, products that are somewhat perishable, get damaged before they ever get put into a house. Of course even when we go to build houses, we're importing the tradespeople from the south. With a few houses being built in a short period, it's hard to train people to be electricians and plumbers in these communities.

What the airship would change—and this is why it is a game-changer—is that it would allow year-round service. In addition to bringing in materials year-round for building houses and other activities, it could bring in food products and other things with it.

I think your point is whether the airships are too big. Would they be visiting once a month and bringing in supplies? I don't think so. I think you would have a sort of milk run. Many of these communities are located together in Manitoba: St. Theresa Point, Garden Hill, and Wasagamack are all around the same lake. There are 15,000 people living there, so you could have trips coming in every other day with an airship.

The cost would be much less expensive than airplanes. Airplanes are horribly expensive, especially small ones. Because of the runways, the limits are for fewer than seven tonnes of lift for an airplane, and that would be a big one.

● (0925)

Mr. Charlie Angus: So what does it take—

The Chair: I have to stop there. Sorry.

Madame St-Denis, welcome.

[*Translation*]

Ms. Lise St-Denis (Saint-Maurice—Champlain, Lib.): Thank you, Mr. Chair.

Are there any comparative studies on the costs of the various modes of transportation used to service northern Canada—airships, airplanes, trucks, roads, trains?

[*English*]

Dr. Barry Prentice: There are no good comparative studies simply because not very much work has been done on this. We will use all means of transport. For example, bringing oil into the communities on the coast I still see being done by ships, because it's very inexpensive to have them do that, and where we can use other modes of transport that are less expensive, we'll do that.

This will not necessarily replace everything we're doing. It will add to the things we are doing now, but it will change many of the things that are problematic, such as building materials and food supplies.

I suppose another thing is if you cannot get year-round, relatively affordable transportation in and out of a community, how do you ever create jobs in that community? How do you do things if you can't trade with the rest of the world?

One of the great economic development benefits of the airships will be affordable transportation to actually be able to have jobs and to move people and goods and materials less expensively.

[*Translation*]

Ms. Lise St-Denis: Indeed, regarding jobs and other means of transportation, could the residents of Canada's north participate more actively in the introduction of airships? Would there be greater participation by northern peoples in the use of airships as opposed to other means of transportation? Is that the plan?

[*English*]

Dr. Barry Prentice: That is my hope, indeed. Mr. Ginter and I have in fact been talking about this. There is no reason that first nations members cannot be the pilots, the owners, the operators. They are located in the north. They should be the ones who are doing this. They certainly are the operators in some of the small airlines we see in Manitoba and in northwestern Ontario and in Quebec, such as Quebecair. So I would say yes, this should be their business.

Mr. Guy S. Ginter: Just to add to that, I would suggest that Moose Cree is here in the first place because we want to take a leading role in developing this and moving this forward. Moose Cree has always been very aggressive, and that's the role we want to play, because we see a future and we see opportunity for our communities not only within Moose Factory and Moosonee but certainly also within other communities.

Further to that, I am meeting with all the chiefs of the western James Bay coast tomorrow, as a matter of fact, and this discussion will be brought up.

● (0930)

[*Translation*]

Ms. Lise St-Denis: You will be using this opportunity to discuss possible economic spinoffs for these communities.

[*English*]

Mr. Guy S. Ginter: I think the first meeting will be more of an introduction to understand what's involved and what's going on. Certainly from that we will be leading towards all of the potential economic benefits and the “hows” and the “wherefores”.

We've engaged a formal study that will give us a lot of details in the area of costs and will allow us to justify doing this. We'll have that study by the end of August, as I understand.

[*Translation*]

Ms. Lise St-Denis: Will Canada, through the development of northern communities, be able to assert its sovereignty in the Arctic?

[*English*]

Mr. Guy S. Ginter: Absolutely. I would suggest that the Canadian military attended a conference in Seattle, Washington, several months ago with the specific intention of looking at the viability of using this. I did have the benefit of speaking with an individual who attended, and she also stated very clearly that she could see wonderful opportunities for the military on that very issue.

Imagine, if you will, an airship being in the air for 30 days at a time without having to refuel or anything. Imagine the area you could cover, and imagine being able to respond to disasters, environmental or otherwise, that could happen in the north. The possibilities are endless.

Dr. Barry Prentice: Maybe I could add to that on the question of sovereignty. Certainly the ability to move people and materials quickly to any location is one of the great advantages. We look at such things as search and rescue or cleanup of pollution or an oil spill. One of the most difficult issues is how you accommodate people. Where do they live when they're doing this work? Trying to bring in these ATCO trailers or something for people to actually stay in while they are doing the work is a major dilemma. The airship would be able to move that kind of material in very quickly and put it down, and they could build a temporary camp and go on. So it would add greatly to our sovereignty.

[*Translation*]

Ms. Lise St-Denis: What is the impact of means of transportation on the viability of northern communities?

[*English*]

Dr. Barry Prentice: Perhaps I'd ask Mr. Russell to speak to that.

Mr. Stuart Russell (President, Livingstone Range Consulting Services): Good morning, everyone. I haven't had a chance to say hello. My two colleagues here are quite the chatterboxes, as you've noticed.

I'm just kidding.

I think, realistically, my colleagues are very well versed in what they do, and I'm a logistics guy. I spend most of my time working in the Arctic. I have for the past 40 years used every type of device to move materials around.

To your question, Madam St-Denis, the cost of moving things on the water is the cheapest, most economical way to move things. When you move them on the water, you move them as far as you can until you run out of water. Then you put them on the train, because it costs a little more money, and if you have no train, then you put them on the truck, and it costs a little more money. If you have absolutely no choice, you put them onto an airplane.

The cost difference, simplistically, between the water and an airplane is about ten to one. If you can move freight on the water for a dollar a pound or a dollar a kilogram, it costs you ten times as much to move it in an airplane.

I think everything about the isolated communities in the north is based on cost. If you have communities with 400 people, 500 people, 1,000 people, they're all a long way from roads and whatever else. As my colleagues have mentioned, once a year you get a sealift. It leaves Montreal, Hay River, or Churchill in the summer and drops off its goods. They have to store that for a whole year. They have to put in 40 million litres of fuel storage or 400,000 square feet of warehouse; they have to spend all of their money at once. Whereas with an airship concept, to come in and bring in their materials once a week, once a month, once a day—whatever the economics dictate—it has to be more economical than what they have in place today.

Most of the resource companies I've worked with and worked beside for years have looked at the airship and said it's a really nice idea. Some of the studies have come out and shown how we could build the Mackenzie gas pipeline by moving everything by airship. Again, a paper project, but....

There are huge opportunities in the north to help the communities, as my colleagues have mentioned. As well, industry has found resources all across the Northwest Territories and Nunavut that they can't economically access. They can't get close enough with an ice road or they can't get close enough with the sealift. They're sitting out there stranded. When they're stranded, if they can't develop the resources, there's no training, no education.

If you look at the area around Yellowknife, where the three diamond mines have come in since the early 1990s, there's been phenomenal educational transfer, and 40% of the employees are aboriginal. Even to your comment about the airlines and the people in the north benefiting, Canadian North flies across northern Canada. They're owned by the Inuit, the Inuvialuit. First Air, which again is Makivik Corporation, I believe is owned by the aboriginal groups.

These companies that fly in the north benefit from it. The majority of their employees are local employees. It has a huge advantage to employ people and keep business going forward.

I think to a cost point of view, the biggest concern of moving things to the north to the community level is black bananas, black tomatoes, and black lettuce. Because if you don't get efficient transportation for your foodstuffs that you bring in, it turns black and you throw it out, so it costs twice as much money as if you just transport it at once.

I guess I could wander off for a long time here. Anyway, it is far more expensive in the north, and there are so few opportunities to move things economically.

Just as one example, in 2006 the ice roads north of Yellowknife, which are very sophisticated.... Barry mentioned the *Ice Road Truckers*. It is a bit of a farce on television. But they planned to move in 10,000 truckloads in 10 weeks. Well, they had 3,300 loads that didn't make it. They had to bring every available cargo airplane that could fly into Yellowknife to fly all those loads out of there—millions and millions of dollars' worth of activity, but they had to do it to keep their mines running, and so on.

There's a huge economic benefit if we can keep doing it.

● (0935)

The Chair: Thank you.

Mr. Poilievre.

Mr. Pierre Poilievre (Nepean—Carleton, CPC): You said, Dr. Prentice, that the airship can lift 50 tonnes cheaper than the cost of trucks, and much less expensively than airplanes. I see here on the table you've presented that we have large corporate players with big budgets. We have at least a half dozen of them with a certified airship device. What is to stop any one of them from simply planning a cargo trip for industrial purposes to a mining site in northern Ontario, and then saying to De Beers or to another mining enterprise, "We are going to be doing this trip on a certain date. You as a company already transport large volumes of goods to these sites. We are prepared to transport them on this date for you at this price, which is significantly lower than you're paying now, so how could it possibly hurt you to try this method," and in so doing, prove itself?

Dr. Barry Prentice: It's a very good question. It's one that I've asked them as well: what is holding you back? It varies with the various companies. Lockheed Martin, which you see on the board, the biggest company by far, is a purely military contractor. It will not do anything civilian. It made that a policy when it almost lost the company with the L-1011 airliner. So it has been a defence contractor only; that's all it will do.

On the other ones, you can go down the list. Some are relatively smaller. Every one of the companies up there has basically suffered from a lack of investment in this technology. It's that lack of business confidence. Again, to bring an airship to Canada and fly it and do a demonstration, Lockheed Martin certainly could afford to if it wanted to, but I'm not so sure the rest of them are in a position to do that.

Beyond that, there are no hangars here. If you have a problem with the airship, where do you go? How do you maintain it? The closest hangar would be in Ohio, and that's owned by Lockheed Martin, and it may not let you in if you're not them. North Carolina has a hangar. There are a couple in California. So it would be very difficult to do that if you ran into trouble.

The second point, of course, is who is going to pay you for your goods? Again, if you are operating a mine for some operation and you have to meet a deadline because you have investors who are depending on you to come up with revenues, you say you will. Are you going to take a chance on a technology that you haven't seen work before? Or are you going to wait for somebody else to make it work and then you'll invest in it? I think it's the latter.

We've talked to companies like Hudbay Minerals. I had a wonderful conversation with the president, and he said he'd hire them right away if they were available, but he wouldn't invest anything in seeing them become available because that's not what they do. They don't take that risk. So all the risk is on the companies to prove themselves.

For that matter, in order to do business in Canada, you have to have a certified airship with pilots operating in Canada. Those are rules we have under the cabotage restrictions that apply to air, truck, and all the rest of our modes of transport. Where would we get the pilots? We have no airship pilots in this country. Maybe we've got three guys who could fly them because they've got hot air balloon pilot licences, but I don't think Lockheed would let them on their airship, not without extensive training. How would you get the airship certified in Canada?

● (0940)

Mr. Pierre Poilievre: Is there no certification process right now in Canada for airships?

Dr. Barry Prentice: There's a reciprocal relationship with the U. S. FAA, so if the company applies to have its airship certified here and brought here, it can do that at a certain price. It does cost, and it takes time, but it could be done. Then you'd have to have a Canadian owner, because our regulations say it has to be a Canadian company that's operating freight within our country. Unless you have a Canadian company willing to purchase it, willing to train pilots, willing to do everything, it wouldn't happen.

Mr. Pierre Poilievre: It sounds like a protectionist obstacle.

Dr. Barry Prentice: It's a regulatory gap. It comes back to our not having any experience with this technology in this country. When the Second World War came around, we trained pilots and the U.S. Navy built the airships and protected the coast and the submarines. So they have a lot of experience with this, and so on, but we don't have any experience in this country or any infrastructure at all. But we have a tremendous need. In fact, where most of the airships are being built in the U.S. and Europe, they don't need airships because they have roads everywhere.

Mr. Pierre Poilievre: Are you suggesting, then, changes just to the cabotage rules in order to allow this—I mean, strictly applied to airships and not airplanes?

Dr. Barry Prentice: I think the cabotage rules are a different topic, and one that I would like to get rid of completely anyway. I'm in favour of free trade in transportation services. I think we diminish ourselves unreasonably without good reason, but that's a debate you'll have to take up with the trucking industry, the airlines, the shipping lines, and everybody else.

Mr. Pierre Poilievre: If we did make changes to the cabotage rules, just strictly applied to this sector, would it help the introduction of this technology in Canada?

Dr. Barry Prentice: No question, because it would remove some of those regulatory barriers we have today to do that, and that would be part of it, yes.

Mr. Pierre Poilievre: Can you succinctly provide us with a paragraph in writing describing that problem and the proposed solution? Just a paragraph would help.

Dr. Barry Prentice: I'd be very happy to do that.

Mr. Pierre Poilievre: Thank you.

On the issue of regulations, you've said there are no pilot training rules right now in Canada for airships, or they're related to hot air balloons...?

Dr. Barry Prentice: That's right. Under the Canadian aviation regulations, or the CARs, as they're referred to, there is no such thing as an airship pilot's licence. What you have is a rating on a hot air balloon licence. A hot air balloon, as we know, has no engines, and an airship has no gas burner that you're pumping. The gauges on a hot air balloon are for the altitude and the temperature in the bag.

An airship has a whole panoply of gauges, like an aircraft, and it has pumps and valves and pressures and a whole—

Mr. Pierre Poilievre: It sounds like a different species.

Dr. Barry Prentice: It is the difference between an auto mechanic and an engineer.

● (0945)

The Chair: We're getting into this deeply, but I'm sorry, you're out of time.

Mr. Watson.

Mr. Jeff Watson (Essex, CPC): Thank you, Mr. Chair.

Thanks to our witnesses for appearing here today.

This is a new and novel topic for me. I know virtually next to nothing in regard to airships, so I may ask some very basic questions to get them onto the record, both for my understanding and for that of anyone else who is reading this.

I'm getting some sense of it. Some of my questions may have been answered along the way, but how versatile is the current technology for airships? Are there weather restrictions? I don't know...do they run on any kinds of fuels at all? I don't understand the technology, so if you could walk us in a layman's way through the technology and its capabilities, that might give us some understanding of how it can be used.

Dr. Barry Prentice: Right. Let me deal first of all with the question of weather, because in Canada we always like to talk about the weather—we have a lot of it.

We have a very fierce winter, and the airships that exist today are basically fair-weather flyers, so they would fly in summer, spring, and fall. It doesn't mean they cannot fly in the winter. In fact, the very first vehicle to cross the North Pole was an airship. The Italian airship *Norge* flew there.

However, there has been no demand for advertising blimps or surveillance blimps in the north, so now the companies have designed their airships to live in 20 degrees or 30 degrees below centigrade, which is what we have to deal with. It can be done.

Mr. Jeff Watson: Or minus 50 degrees in Iqaluit.

Dr. Barry Prentice: Or minus 50 degrees or worse.

Mr. Jeff Watson: It was that way in January when I was there.

Dr. Barry Prentice: So we have to adapt the technology for Canadian conditions. It can be done.

Mr. Jeff Watson: Are there any northern countries that are approving the idea of the airship cargo transport and hangars that you talk about? Is there any international example—with a northern climate—that we can point to?

Dr. Barry Prentice: Yes—Russia. The Russian RosAeroSystems have an airship and they have flown it in the wintertime. That's a government-owned project, really, out of the military of Russia, from what I understand. I don't know that much about it.

Mr. Jeff Watson: They're not using it for sort of commercial applications.

Dr. Barry Prentice: No, they are not using it for freight. They've used it for surveillance and for looking at the hydro lines and so on, but they have not invested heavily in using this. Although they have a problem in Siberia that's very similar to our problem in the north, and they are probably the closest.... But they've shown that airships will fly year-round. It's just that they haven't done that much work with the cargo.

Mr. Jeff Watson: On the issue of weather, in southwestern Ontario, of course, if you don't like the weather, wait 15 minutes and it will change.

But to go back to the capabilities, in regard to flight range and time, how fast do they move and how long would it take to get from.... Well, I don't know where they would start in Manitoba. It might be Churchill, let's say, or would they start farther south? How long would it take to go from there to Iqaluit, let's say? How many days can they stay in the air? How long can they run? Can you just give us some sense of that?

Dr. Barry Prentice: Mr. Russell may be better at talking to the logistics than I, but by and large, they'll start at the end of the roads. You'll truck as far as you can, because it's less expensive to move by truck, and you'll use the airship only where there are no roads. So I would see places such as Hay River, Thompson, Rouyn-Noranda, Cochrane, or Moosonee.... Those are the places where you'd have jumping-off spots. So you'd probably station near—

Mr. Jeff Watson: So they would be like cargo hubs, similar to what Toronto's Pearson would be for commercial aircraft.

Dr. Barry Prentice: Exactly. And you wouldn't necessarily maintain the airship there, because those skilled trades might find a better location in Ottawa, Montreal, Winnipeg, or Toronto. So you'd bring those airships back. You might build them here, but they would live their life up north because that's where they do their work.

With regard to time, they will fly roughly 80 miles an hour at cruising speed, so they're not that slow. Of course they could go faster if you want to burn more fuel. It's really a matter of how fast you need to go. But most freight doesn't have to move that fast.

Mr. Jeff Watson: What kind of fuel do they use?

Dr. Barry Prentice: Typically they're now using diesel engines, or Jet-A. Some are using gas. However, you can use almost any fuel. In fact, the old Zeppelins used a mixture of methane and hydrogen, which was very environmentally benign 75 years ago.

The advantage of an airship is that it's so big, you can have a very large low-pressure tank. You can use a gaseous fuel like hydrogen or methane without having to compress it and getting a heavy tank inside. They do have lots of options.

Stu, would you like to comment on this?

● (0950)

Mr. Stuart Russell: Yes.

I think all I was going to get to, Mr. Watson, was that if you simplistically look at them at 100 miles an hour—Barry says 80, but let's say you take 100 miles an hour—they don't fly over 10,000 feet because they're unpressurized, and from some of the studies we looked at, you could load them in Houston and fly them all the way to Inuvik without stopping for fuel.

On the concept of the Mackenzie gas pipeline, we looked at all the piping manufacturing—

Mr. Jeff Watson: How long would it take to get from Houston to Inuvik?

Mr. Stuart Russell: Divide 3,000 miles by 100 miles an hour.

Mr. Jeff Watson: Okay. Fair enough.

Mr. Stuart Russell: They have looked at double-crewing the crews on board and various things. There are some practical applications, as with anything that flies.

Conceptually, they are designed to be able to do short-lift vertical takeoff, and some of them are designed to do long-haul. It just depends what the application is.

A lot of companies I've chatted with have said many times over what Barry has commented on—namely, if you bring it to the marketplace and prove that it works, we'll use it, but we're not going to spend any money on R and D to get you to develop your machine at our expense.

Mr. Jeff Watson: How big a hangar do you need, and where would you put them for servicing these things?

Mr. Stuart Russell: I think that just depends.

My comment—and again, I know that Barry has quite positive views on where they could be located and how that could be done—would be that it's wherever they need to be. If you look today....

No, I don't say that in a negative sense.

Mr. Jeff Watson: It's nebulous to me, but....

Mr. Stuart Russell: I understand that, but if you look today at Yellowknife in the Northwest Territories, there are more aircraft in Yellowknife than anyplace in Canada, per capita, for hauling cargo. There are three huge diamond mines 300 kilometres northeast of there. You have airplanes that are 75 years old that are still flying every day going to work, because they have a job and someone will pay them to do that.

So, simplistically, you could put an airship hangar in Yellowknife and you could service all of northern Canada, or you could put it in Hay River, or probably both, because they're accessible by road. But as Barry mentioned, they only come back to the hangar for about ten days a year. For the other 355 days of the year, they're out running around making money, doing jobs, and supporting things. They only go back to the hangar once a year.

The location isn't really as important, in my mind, as the fact that there is one physically located so that you can service them—like a dry dock.

Mr. Jeff Watson: Okay.

In one of your first slides, you ranked current solutions for transportation in northern Canada. You ranked them by costs, from cheapest to most expensive. Where do you think you would stick airships in that list?

Mr. Stuart Russell: Between airplanes and trucks.

Mr. Jeff Watson: Okay.

Thank you.

The Chair: Thank you, Mr. Watson.

Monsieur Aubin.

[*Translation*]

Mr. Robert Aubin (Trois-Rivières, NDP): Thank you, Mr. Chair.

Welcome to our witnesses. I thank you for sharing your expertise with us. This morning I feel like I am participating in the writing of the script for the next episode of *Back to the Future*.

I am not sure I understood correctly. I got the impression a while ago that we are talking about one unit only, one airship only. In your estimation, how large a fleet would it take to meet the needs of the entire Canadian north?

[*English*]

Dr. Barry Prentice: I actually did an estimate of that. Looking at a 50-tonne-equivalent lift, in my view, we need somewhere between 100 and 250 of these airships right now. If we had them available, they could be used.

Mining would probably be the biggest single use. There are many locations where, as Mr. Russell mentioned, you cannot get access to the mine and therefore you can't open the mine because you can't afford to build a road to the mine. If the airships were available, you'd fly over all the difficult areas, bring in your equipment, produce concentrates, and carry out the mineral concentrates on a year-round basis.

So it's anybody's guess, I suppose, but adding up all the various potential uses, between sovereignty, service to the northern communities, the mining, oil and gas, building pipelines, building electrical transmission lines, setting up wind turbines, and all the different things that could be done, it would be between 100 and 250 airships right now.

With all technologies, especially these sorts of game-changing technologies, you don't really find out until you start how many other uses there can be. Once the airships get to a lift size of around 100 to 150 tonnes, they will start crossing oceans.

We see them in the longer term for not just domestic Canadian use; we'll be using airships to lift goods to China or to Europe, or perhaps move back and forth between the tropical zones.

We might actually get tomatoes that taste like tomatoes someday if we bring them by airship.

[*Translation*]

Mr. Robert Aubin: Very well.

There are none today, but you would like to see 150 to 200 airships. At what number would you reach the break-even point? In other words, how many airships would it take to recover the money spent, for example, on ice road construction and to provide those services instead with airships?

What is the minimum required in order to recover those amounts? One or two airships are obviously not enough.

● (0955)

[*English*]

Dr. Barry Prentice: No.

It's a very good question. I've said that in Manitoba for roughly $100 million you could build a hangar and buy three 20-tonne-lift airships and you could serve all of Manitoba, with all the communities that are there. Today we spend roughly $10 million every year on ice roads, and that's just getting goods in. So in ten years' time, you'd be then further head without spending anything else differently.

But in terms of the ice roads, there are two types of ice roads. There's the community-connection ice roads, where people drive around in pickup trucks, with their cars, and then there are the ice roads that need tractor-trailers. As Mr. Ginter said, they get around 60 days' use for the community movement, because you can travel over the ice in a lighter vehicle. It's thinner ice, but it will be safe. But in a tractor-trailer it has to be very thick. So we would still probably build some ice roads between the communities, but you would use the airships to bring in goods year-round.

How many do you need to make a difference? Certainly I see three in Manitoba. You'd probably need five in Ontario and maybe the equal in Quebec. And then in the Arctic you're probably looking at more than that, because you have much longer distances. That would be under current conditions. As you start moving forward and developing resources, then of course things would become possible that aren't possible today.

[*Translation*]

Mr. Robert Aubin: With this minimal fleet, in Quebec as well as in Manitoba, to service mining companies and bring in consumer products, would it be possible to implement in Canada's north, just as we do in the south, the concept of just-in-time delivery? We could then save on everything to do with storage, since there would be guaranteed regular deliveries.

[*English*]

Dr. Barry Prentice: I absolutely believe that, but maybe I'll let Mr. Russell speak.

Mr. Stuart Russell: I believe that's an absolute inevitability. The reason I say this is that when the organizations and locations are supplied in the north now in the summertime by the sealift or in the wintertime by the ice road, as I mentioned earlier, they buy everything once a year and they have to store it. When you want to build a mine today in the north, of course you have to get access to the land, and then you have to get a permit. In order to get your permit, you have to have land use regulations and environmental impact studies done.

If you bring your materials in once a year, and you need a huge fuel storage tank and a huge warehouse because you have to store these things all year, and a 5,000- or 6,000-foot-long runway, you have to get permission to do that. The bigger the area that you're consuming, the longer the permitting time. If you bring your materials in once a week or once a month, so you need a smaller warehouse and a smaller fuel tank, you get your permits, in my estimation, faster. I think today in the Northwest Territories it's considered ten years from the time you find a deposit to go through all those steps to produce it. So if you don't get your revenue coming in until you finish the mine and you're producing, and it takes ten years, if you're able to shrink that because you can do it faster and do it in five years, then revenue comes, and more employment, more taxes, and more infrastructure comes with it for the people who live there.

The Chair: Thank you.

Mr. Adler.

Mr. Mark Adler (York Centre, CPC): Thank you, Chair.

Thank you for being here today. It's a very interesting discussion.

Let's just pretend I'm a private investor and I like what I'm hearing and I want to run with this. What's this going to cost me? Let's just say I'll purchase one to start. How much will it cost me to purchase it and to service it? What kind of infrastructure will I need, and how much is that going to cost? And what kind of expertise am I going to need locally to maintain the aircraft? Take me through that.

Dr. Barry Prentice: First of all, of course you cannot have an airship that's bigger than the hangar you have to put it in. You have to decide how big an airship you're going to have and then how big a hangar you're going to have. You have to have a hangar.

The price will depend on the airship size, obviously. We have some ideas for how that might be reduced. But as a rule of thumb for airships, they get better as they get bigger. The price is about $1 million per tonne of lift. It's more when they're smaller. As you get bigger, that starts to diminish. But that gives you a rough idea.

A 20-tonne-lift airship might cost around $20 million. By comparison, the Hercules, which has similar lift—the military, the Canadian government, purchased some recently—I believe are about $89 million apiece. It's much more expensive to buy airplanes.

Part of the reason is that an airship isn't pressurized. It's not going 500 miles an hour. It doesn't have jet engines. Most what you have is fabric and the envelope. So it's a less expensive vehicle to begin with, just to build it. And of course it has a similar sort of life, or at least it should have.

In terms of the cost, part of it is this issue of regulations. The first thing you'd be asking me is when we get started. I'd say that it depends. How are we going to get the pilots trained and set up, and when will we get going? That's an uncertainty. We don't know the answer.

● (1000)

Mr. Mark Adler: Where are the training facilities for pilots?

Dr. Barry Prentice: The only place right now where you can actually get an airship pilot's licence is in San Francisco. There's a company there that does this. But it's very expensive. Of course, that licence would not be respected here, because it's not a hot air balloon licence. You would have to do that first.

Typically what happens is that most airship pilots are trained on the job. Typically they have an airplane pilot's licence in the U.S., and then they go through certain training and they get time on the airship with the small companies that are doing this. Eventually they get to sit in the left seat. That's the way it is done.

But we don't really have services like that here today.

Mr. Mark Adler: Okay.

In terms of maintenance and all of that—

Dr. Barry Prentice: Oh, sorry, maintenance—

Mr. Mark Adler: Carry on.

Dr. Barry Prentice: Maintenance is relatively low. Typically you're looking at using diesel engines, which are low maintenance. The airframe is obviously not an issue. You do have to have an inspection. Those ten days you're spending in the hangar include seven days for an annual end-to-end inspection. It has to have it annually.

The regulations for airplanes, which may be the same for the airships, say that every thousand hours, or whatever that number is, you have to go in for a check-over. There are certain checks that go along with that, and the regulations follow that, except, again, in Canada. Since we have no experience, and we have no airships, we really have no regulations like that.

In fact, this may be an opportunity for us. I don't suggest that we simply carbon copy what's been done in other places. We should look and see what's reasonable for Canada to do, because these are not the same as airplanes.

These are different vehicles. They don't fall out of the sky when the engines quit. They float around. You can come down to earth safely by releasing the emergency valves. They don't have the same kinds of pilot requirements in the sense that it's kind of a boring job, being an airship pilot, because you move pretty slowly. You're going along. It's not very exciting, as it would be in an airplane.

The regulations need to be developed specifically for this technology and not just carbon copied from someplace else.

To give you an example, again, my view is that with $100 million, you could buy three airships, the 20-tonne size, and have a hangar. That's enough to get started. That's a relatively low number compared to what it would cost to start up an airplane operation of a similar size.

Mr. Mark Adler: In terms of the component parts, what is used to construct the airship? They are made primarily where and by whom?

Dr. Barry Prentice: There are different designs. Because this technology has been held back for so long, and technology has moved so far forward, it's not clear what the dominant design is going to be. Are they going to be a cigar shape? Are they going to be one of these flat-shaped ones that take care of aerodynamic lift? Are they going to be a non-rigid structure, with a flexible envelope, or are they going to be a rigid structure? Will it be composite materials? Will it be aluminum? Will they have one big gas bag or many cells?

One of the exciting aspects of this technology is that we're going to find out. In fact, one of the things we'd like to encourage is innovation and competition.

One of the arguments that I would suggest to the committee is to think about the notion of public hangars. I know this may be anathema to this committee to even think about any kind of expenditure at this point, and I respect that as a taxpayer. But in transportation it's a shared jurisdiction. The public provides the roads, the private sector provides the trucks. The public sector provides the airports, the private sector provides the airplanes. The public provides ports, the private sector provides the ships.

In the case of airships, don't think of them as being hangars, think of them as being like dry docks. We have public dry docks. They are a place where you could encourage many companies to take advantage of this, so you'd get multiple companies competing in the industry, you'd get rapid technological advance, you'd get many ideas tried, and then we'd find out what works best.

● (1005)

The Chair: I have to stop you there.

I'll go to Ms. Chow.

Ms. Olivia Chow (Trinity—Spadina, NDP): How does one get a pilot licence? You can't right now, because there are no regulations—

Dr. Barry Prentice: The way the regulations read is that you have to—

Ms. Olivia Chow: There's the hot air balloon. I heard your previous answer. If Canada were to change that, what would need to happen?

Dr. Barry Prentice: The regulations would have to be changed.

The U.S. regulations are something like 50 hours on an airship after you have a fixed-wing aircraft pilot licence, and 10 of those hours have to be on an actual airship. The other 40 could be in a simulator. I believe that's what the U.S. regulations are. I can get the fine details for that, but that is what the U.S. requires.

What Canada really did is we adopted a lot of the U.S. regulations, but we didn't adopt the update. We have the previous regulations.

Ms. Olivia Chow: I see that in August 2011 Hybrid Air Vehicles signed a provisional deal with Discovery Air Innovations to sell the hybrid for use in northern Canada, with the hope of its being finalized this year. Was it finalized? Is it four to five airships at $40 million per aircraft? Is this just talk, or did it actually happen?

Dr. Barry Prentice: It's more than just talk, but maybe Stu would have the information better than I do.

Ms. Olivia Chow: So it's signed. Has it been delivered? The first is supposed to be delivered in 2014. What's the plan there?

Mr. Stuart Russell: Quite honestly, and again from my own perspective.... The Hybrid Air Vehicles in the United Kingdom is a group I've been associated with for about seven years, watching what they've been doing and helping them to get advice about what you do at 40-below and 50-below in the Arctic to move things.

The current situation is that Hybrid Air Vehicles and Discovery Air have come up with a program where Discovery Air would like to fly these vehicles and Hybrid Air Vehicles would like to manufacture them, have them shipped over here and designed.

Currently there is the LEMV project with the U.S. Army. They built a prototype of this machine for surveillance, for the U.S. Army. It's been moved to North America. It's been assembled in the eastern seaboard at Lakehurst, in New Jersey. It's my personal opinion that if the LEMV project flies and it does what the U.S. Army wants it to do, they will purchase two more of the machines, to make it a total of three unmanned machines. It will be the credibility stamp, in my opinion, to the airship and hybrid industry that says that the concept works.

As Barry mentioned earlier, most of the airplanes we fly cargo with in the north today were built from a military budget. Airships and hybrids are not the same, so they need somebody to come along and support that program. If the LEMV project works and the U.S. Army adopts it, it will give a credibility stamp to industry, and then that project with Discovery Air and Hybrid Air Vehicles will have a possibility to go forward to bring those hybrids to Canada. They say that the first quarter of 2015 is conceptually when they're looking at for them.

Ms. Olivia Chow: Oh, so it's no longer.... Is the deal signed, though?

Mr. Stuart Russell: Again, I'm no expert on that. I believe they have an arrangement in place.

Ms. Olivia Chow: So the arrangement is in place, and they plan to use it in Canada?

Mr. Stuart Russell: That's correct.

Ms. Olivia Chow: And in order for that to take place, we need the regulations. We need pilot licensing.

Has Discovery Air Innovations approached Transport Canada? Have they asked Transport Canada to assist them in a certain way? Has there been any application for funding of any kind? Are you aware of any of that?

● (1010)

The Chair: I'll just let the committee know that we do have DAI coming in on Thursday.

Ms. Olivia Chow: Thank you.

Mr. Stuart Russell: That would be better. But to answer that question, I'm not inside on that information, but I know they've been working together closely.

Ms. Olivia Chow: Thank you. I will save my questions on all the details for that time.

On the research side, is this the most advanced vehicle on the entire list?

Dr. Barry Prentice: At this point, it is.

Mr. Stuart Russell: In my opinion, it is.

Dr. Barry Prentice: Although the Lockheed Martin vehicle has been built and flown, so in some ways it's more advanced. It's more proven.

Ms. Olivia Chow: Sorry, I couldn't really hear you.

Dr. Barry Prentice: Lockheed Martin built and flew a prototype vehicle actually some three or four years ago.

Ms. Olivia Chow: Right. What did they do to it?

Dr. Barry Prentice: Well, they were looking for this military contract, and everybody thought they were going to get it, and then surprisingly they did not. Northrop Grumman got it.

Ms. Olivia Chow: So did they shelve the airship?

Dr. Barry Prentice: No, they still have it and they continue to do research on it. In fact a business in Calgary has been talking with them. I don't know the status of that, but they've looked at a civilian model of it as a possibility. But they certainly have continued to refine that vehicle since that time.

The Chair: Mr. Toet.

Mr. Lawrence Toet (Elmwood—Transcona, CPC): Thank you, Mr. Chair.

I want to start with Mr. Russell.

You gave us a pricing on air transport versus water transport, and it was ten to one. Where does the airship fit into that? Is it still at the $10 range, or is it coming down some?

Mr. Stuart Russell: I think my comment was that the faster it goes, the more money it costs.

It's between a truck and an airplane. So it moves a little bit faster —80 to 100 miles per hour. It will fit somewhere in that program. So if water transportation is a dollar, I can hypothetically say that it's $6, instead of $10 for an airplane at 500 miles an hour. That's just an opinion.

Mr. Lawrence Toet: Okay, but it gives us a range of what we're looking at.

Dr. Prentice, if I am a private investor—and I'm picking up a little bit from where Mr. Adler was going—what is my return on investment? Using the Manitoba example that you had, and the $100 million for a hangar and three aircraft, what's my ROI?

Dr. Barry Prentice: That's a very good question, and I guess that's part of the reason I don't see people lining up to make the investment: they don't know, and we can't guarantee this. In fact, we can't even guarantee at this point when we would do this, when we would get started under the current situation. Clearly Discovery Air has run the numbers, and they believe there's a profitable opportunity for them. They're looking at a 50-tonne-lift airship, as opposed to something that would be around 20 tonnes. Our feeling is that anything over 10-tonnes-lift actually would have a market in the north, because it would be more efficient than anything that is there today.

But the bigger you get, the better it is, obviously, because you have more tonnes per dollar of expense.

Mr. Lawrence Toet: Surely somebody has done some work on how many tonnes are going to each different community up north and all those kinds of things, what the cost of bringing that up would be, and what the sell point could be, compared to what it is today with the winter roads, and not being able to bring it year-round. We talked a little bit about just-on-time delivery, all those aspects that will actually enhance the bottom line, not only for the airship company but also for the other companies that they're servicing.

So is there no idea at all, or are we talking five years or twenty years? Do we have any feeling at all on this?

Dr. Barry Prentice: I wish I could tell you the experts in Transport Canada were further along on this and would have those numbers, but quite frankly they haven't done the work to find out, so they don't have any advice for us. If you look across the country to find out who's done work on it, it's pretty much the University of Manitoba.

Given this is such a critical issue in terms of transportation for our north, you would think we would have a lot more understanding of what's been going on, or what the possibility is, but the investment has not been made.

● (1015)

Mr. Lawrence Toet: One of your recommendations would be, then, that there actually be some research into the cost-effectiveness of this.

Dr. Barry Prentice: Exactly.

Mr. Lawrence Toet: It hasn't been done.

Dr. Barry Prentice: It hasn't been done. In fact I would even go further and say that we've been asking for ten years now. I had been meeting with people in Transport Canada. I've asked for a policy statement, even a statement that just says this is a topic we should be pursuing, and we have not yet been able to get that. It's a refusal to even address that issue.

When the policy branch doesn't endorse this or encourage it, the regulatory branch is certainly not going to move ahead of it. It also holds up the rest of the government.

I've also talked to people in Natural Resources Canada, Aboriginal and Northern Affairs Canada, and Industry Canada, and the first question I always get asks what Transport Canada thinks about this. We're always back to the case that they won't say anything.

Mr. Lawrence Toet: We talked about 2,000 kilometres of ice roads in Manitoba. I have two questions. How many kilometres of ice road would we eliminate through your proposal of three airships? The other part is how many communities that we are not able to serve today with ice roads would we be able to serve if we had the airship answer?

Dr. Barry Prentice: First of all, you would be able to serve every community up there with the airships. There is no community in Manitoba that would not be served if that were the case.

There would still be some community ice roads built, but they may not have to be built to the outside. The people who live there take advantage of the winter to visit their relatives in the communities. They'll drive back and forth on the ice roads to visit the various communities, but they can do that on very small ice roads in pickup trucks and otherwise. It's the carrying of tractor trailers where you need the thick ice.

There's no reason we wouldn't be able to serve them all. I will give you a snapshot cost of the price difference. The Province of Manitoba has looked at a plan to put permanent gravel roads on the east side of Lake Winnipeg that would serve a population of 15,200 people. It's 852 kilometres of gravel roads, and the price tag is $2.8 billion. It's a tremendous cost, and it's partly because you're building across muskeg, swamp, outcrops, and permafrost. It's a really difficult terrain. That doesn't even deal with the issues like the caribou and the wildlife that get disturbed by building roads through this area.

In my mind, the roads are really not a very good solution, and they're certainly not a competitive solution versus the airship, which would be able to serve all these communities.

The Chair: Thank you.

Go ahead, Ms. Morin.

[*Translation*]

Ms. Isabelle Morin (Notre-Dame-de-Grâce—Lachine, NDP): I will share my time with my colleague Jack Harris.

We talked a lot about roads and aircraft, but I would like you to discuss more specifically railways. There is a railway line all the way to Moose Creek. I would like you to tell us why, in your opinion, airships are a better option than the existing railroads.

[*English*]

Dr. Barry Prentice: First of all, I should tell you that, by training, I'm a transportation economist. I love trains. I love roads. I love all modes of transport, so I have no particular bias, but each one has its benefits.

The merits of trains are for very high volumes and very long distances. For moving coal, grain, or potash, there's nothing that will compete with a train, and we should always use trains.

When you're looking at relatively low volumes and relatively short distances, the trains are a very expensive option. The track alone, the steel, is tremendously expensive to maintain. On a mainline track you have to replace 25 railway ties every year on average per mile. You have to replace the steel, you have to replace the ballast, and the train sets are expensive.

We simply do not have the volume of traffic to justify trains in the north. Even with a train such as the one going to Moosonee, one of its big problems is there's not enough volume of traffic to pay for the rail line, and it's the same with the one to Churchill. The railways have been abandoning the branch lines for the very same reason across the country and sticking to the mainlines. That's the principal reason why the trains don't serve.

● (1020)

[*Translation*]

Ms. Isabelle Morin: Thank you.

However, in the opinion of many, freight carriage by means of airships could be too costly, somewhat too slow and therefore a bit less profitable.

You say that Transport Canada does not want to deal with this file, which is rather strange. Since airships have been in existence for 100 years and have never been very popular, I wonder how come they are being presented today, in 2012, as a miraculous solution. If they are so miraculous, why did they not raise any interest earlier?

[*English*]

Dr. Barry Prentice: It's a very valid question. It gets asked on a regular basis, and it should be. It's historical in many ways. It has to do with investment in the technology.

Before the Second World War airships and airplanes were neck-and-neck as to which was going to be the main passenger carrier. Airships were actually winning, because they were deemed to be safer than airplanes.

Airplanes weren't safe for crossing oceans before the Second World War, but airships had proven to be a disaster in terms of a military craft. They're not a very good aggressive craft, whereas airplanes were the best for that. So between the Germans, the Japanese, the Americans, the British, the French, and everybody else, in that five-year period half a million airplanes were built. We went from airplanes that weren't safe to cross oceans, to high-altitude bombers and jet engines. Then with the Cold War, they just continued to pour public money into investing in airplanes.

The private sector picked up on this, so the Boeing 707 aircraft came out as a passenger airline. Fuel was cheap. Nobody was carrying freight at that time, except in the bellies. Nobody cared about the environment. Every place you wanted to go there was a runway, so why would anybody invest in airships?

As time went on, even though people said maybe we should look at airships again, there was never a compelling case because airplanes had all the pilots and ground crews trained from the military. All the investment had been made in the aircraft already. There was really no compelling case to build airships. That is really why they have never gone forward. Now things have changed, and we're in a situation where they do make sense.

[*Translation*]

Ms. Isabelle Morin: Very well.

I will give the floor to my colleague.

[*English*]

Mr. Jack Harris (St. John's East, NDP): Thank you for a most interesting topic that you're bringing up.

Airship transportation in the north is also of importance to my province of Newfoundland and Labrador. We have difficulties and costs supplying a population in the northern part of the province in Labrador, but we don't have the ice road situation. I think that's a big issue in Manitoba and other parts of the north.

I have two questions on climate, and maybe on the price of fuel, and what not. Do we have a potential problem with the warming of the winters and the ice roads being unstable? Is that why you think this might be a solution? Will this potentially help offset some of those problems we're seeing on the horizon?

Secondly—Mr. Russell might want to comment, or either one, it doesn't matter—is there a niche in transatlantic travel and cargo with respect to airships, given the historical reliance on wind to bring goods and people across the Atlantic? The trade winds blowing one way in the spring and the other way in the fall help you out, and you don't have to use as much fuel. Is that just a romantic notion, or is it something that might realistically fit in with your notion of transportation economics? Is that just a pipedream, or is it a possibility as well?

Dr. Barry Prentice: The airships used to cross the Atlantic in 24 to 36 hours, which is very fast for cargo movement. Very little cargo has to move at 500 miles an hour. The railway's average speed, by the way, is about 25 miles an hour. If you can go 80 miles an hour in an airship, that's actually quite fast and reliable. Crossing oceans is a very desirable market for them.

On the ice roads, my view is that a trend will continue until you see a change in the trend. We're seeing the trend continuing very dramatically, and it's not changing.

Mr. Ginter is the expert on ice roads, so I'll perhaps let him answer that question.

● (1025)

Mr. Guy S. Ginter: This year was a classic example of what we're seeing more and more. The road was available for a significantly shorter period of time, and the danger is that if you can't get all your goods in within that window you're stuck for a year. You have no other option in northern Ontario, you just do not. I suspect it would be exactly the same in almost every other region. You just miss your window, period, end of conversation. Whatever you're going to do on this winter's road needs to happen on the following winter's road, because your window could be 20 to 25 days.

There was a time when 60 to 65 days was not uncommon for a non-commercial road. You just don't get that any more. That's a function of where we are today.

One elder said to me that this is the same weather he remembers in 1947. Now, I'm not sure if that's a function of global warming or that's a function of where we are in the cycle of weather, but regardless, we are where we are, and winter is significantly shorter than it has been in recent decades.

The Chair: Thank you.

Mr. Richards.

Mr. Blake Richards (Wild Rose, CPC): Thank you.

I appreciate all of you being here today. It's been informative and interesting.

I think there is some potential here, certainly in terms of what you're looking to do.

I've got a few questions.

I don't know a lot about airships. I know you've talked about some of the challenges and opportunities you have, but I'm curious about using them in the north. How would things like weather, heavy winds, and extreme cold affect their operations? Is that a challenge to their use in the north?

Dr. Barry Prentice: I'll let Mr. Russell answer that.

Mr. Stuart Russell: Quite sincerely, I think every aircraft that flies today has a limitation. I spent ten years flying on the Hercules with Pacific Western, and we flew all over the world. Some days you could fly and some days you couldn't. We've been in the Arctic when it's 60 below and the wind is blowing 50 miles an hour for five or six days. Could anybody fly? No.

I think every aircraft has some kind of limitation. Most of the concern that I continue to hear in my discussions with people is what we're going to do when it's really windy. They're worried about the wind.

I don't think there's as much of an issue with the cold. Some days you'll be able to fly the machines and some days you won't. There will just be days when it can happen.

How many days a year could you not fly? I don't know. There will be limitations when they cannot fly, but generally speaking, with today's equipment, today's avionics, today's satellite tracking, and all the communications between any aircraft that flies, they should be able to fly as many days as is physically possible.

Mr. Blake Richards: Okay.

You're saying that you really can't give me an estimate as to how many days. I know every year would be different, of course, but how would it compare to current air traffic that you would have up there, in terms of number of days that maybe wouldn't be useful or that you couldn't fly? Would be it comparable or better or worse?

Mr. Stuart Russell: Again, Barry, maybe you could default a bit more to that on the technical side.

Dr. Barry Prentice: Go ahead, Guy.

Mr. Guy S. Ginter: I can give you a practical example. I can tell you that De Beers loses 15 to 25 days annually on fog days. Imagine, if you will, a somewhat similar situation could exist with airships.

Dr. Barry Prentice: That's the one case where airships will not be affected. Fog will not affect an airship because you can come in and can sit there and come down vertically.

In one of the recent accidents we saw in northwestern Ontario, an airplane came in, he couldn't find the runway, and he ended up crashing on the lake. That was somewhat weather-related, but also pilot error.

In the case of an airship, you never put down that way because you can always put down vertically wherever you're going to go. So the fog isn't the problem the way it is with other things. Other issues may be more limiting, but our view is that they'd be about as useful as airplanes.

Mr. Blake Richards: Obviously that's a huge advantage with fog.

I can remember my son being in a hockey tournament up in northern B.C. and being stuck up there for several days as a result of fog. So there's a great example of an advantage, for sure.

Compared to air traffic or your other options, like ice roads or whatever other options there might be that could be developed, can you tell me some more advantages there might be to airships, what disadvantages there might be, and why those?

● (1030)

Dr. Barry Prentice: The major advantage is that you have year-round transport, and you have year-round transport with big bulky things. By pound or by kilo, one of the most expensive things to move to the north is rigid insulation. You can fill a whole truck full of insulation and have half a tonne. The airship's only restriction is weight, and they're so big. So you could have a big cargo bay and you could move big bulky things and awkward pieces. In the north, bringing in something that's pre-assembled reduces your costs a lot. For instance, you cannot bring in pre-formed rafters for houses today. Even the trucks sometimes wouldn't be big enough to bring that in for a community facility. Those are some of the advantages you'd have.

In terms of disadvantages, the only thing we see as a unique characteristic would be if you get caught in a snow and icing condition. Obviously there's a bit of work that needs to be done on how to make sure that the ice doesn't.... It won't affect the flying, but it makes the airship heavy. If it becomes heavy then it might not be able to carry as much freight or it might be forced to the ground. There are ideas on how to come around that. Again, this is part of the technological development that is required. We don't see it as a game stopper, but we can't just ignore it. It's got to be done.

I would also say something that might not be as obvious. We've talked a lot about the north. I think we should also talk about the south. This is a technology. If we can do it in Canada, we can export it around the world. We're not the only place with these kinds of difficult conditions. Certainly with places like the Amazon, the Congo, Siberia, and the outback, there are many places in the world that need this technology. I see this stimulating the aerospace communities in locations like Montreal and Toronto, and I'd hope Winnipeg, so we actually are building machines and selling them. So there's also something in this for the country beyond just serving the north, which we shouldn't completely ignore.

The Chair: Thank you.

Mr. Holder.

Mr. Ed Holder (London West, CPC): Thank you, Chair.

I'd like to thank our guests for your testimony today. I find it very interesting. It is an area I'm not particularly familiar with, and I've certainly learned a lot today. I guess I have old impressions of what you've been discussing today. When you think of the ice roads up north, of course, then there's the television show. When you talk about airships, respectfully, I think of the *Hindenburg*, and that's probably not an example you'd want to bring up today. Then I think of the RE/MAX commercial *Above the Crowd!* with hot air balloons. Mine is a naive and stereotypical impression of the various aspects of the industry.

It's fascinating where you're going. Yours is an old technology that you're now trying to bring forward as a new technology in an interesting kind of way. I'm trying to understand the economics of it, because I heard you say there were 15 to 25 days of fog when De Beers couldn't work as a result. You've now indicated, I believe, Mr. Prentice, that an airship could work in fog.

Dr. Barry Prentice: Yes.

Mr. Ed Holder: When I'm trying to understand the economics of it, with all the mining interests we have up north.... And by the way, I'll exclude the human condition. I think that's an important thing when we talk about various communities up north, but I'm excluding them only for the purpose of this part of the discussion. I'm trying to understand, though, with all the commercial opportunities that seem to exist in our far north, and I guess Alaska—and in the countries on the list you've given us—why this isn't a full-fledged industry today. Why are you talking about it as if it's the next best thing?

Dr. Barry Prentice: Your questions are valid. I would use windmills as a comparison. Windmills were used, obviously, in Holland—the old Dutch windmills—and we used small windmills across the prairies and many places to pump water and generate a little electricity up to about 1950, when we put in an electrical grid, and then they were all abandoned. We thought that was the end of them. Then the energy prices went up and all of a sudden we started seeing people investing in them—Denmark, in particular. Now there are wind turbines—a new name branded. It's the very same technology, but with modern materials and modern designs, and they're generating income and benefits all around the world.

Mr. Ed Holder: Respectfully, I'm not sure that in the province of Ontario, where I'm from, the turbines are getting such good play these days, so I'll hold off on that as being the stellar example.

I just wonder, respectfully, because I think you are on an interesting path, what the business plan is. I've heard all the pros. You've been very candid, by the way. I liked what I heard you say today, that there is a lack of business confidence, that Transport Canada isn't saying anything as well, and that there are regulatory challenges. I get all that. But if there's no business confidence, why should we have confidence?

● (1035)

Dr. Barry Prentice: I guess that's a valid question. Maybe that's what the role of government is. Government does create stability. It creates the framework for business to prosper and go forward. Part of the role of government is to make sure the environment is correct so people will make investments and take chances. The last thing I'd like to see is a national airship company owned and operated by the state. We don't need that.

Mr. Ed Holder: I would absolutely agree with that part.

There seems to be a lot of business acumen out there. I look at the three people here right now, and I think you're fairly scholarly. I think you understand the industry. But if there isn't the business confidence to do this, why should the government do it? I can only imagine, and I fear.... Without a business plan, I just don't see how it would work.

I guess my practical question is, have you created a business plan, and where is it?

Dr. Barry Prentice: No, we haven't created a business plan. I'm an academic. We have a small airship we built for research purposes to look at things, and we'll be going on that. We're sort of testing the system and challenging the way the regulations work with that. But setting up an aircraft business is a huge enterprise. It's a huge barrier to entry for anybody to get started—even just the regulations on such things as certification and operating an industry.

To answer your question on why you should care, the truth of the matter is that you're already paying. Money flows out of the treasury every year to maintain all the communities in the north. You're paying all the freight to bring things in, and when the ice roads fail you're paying even more to bring it in by small airplanes.

So we're suggesting that here's an opportunity to actually reduce the burden on government. Yes, there is a need to get started. How many transportation innovations started without any government support? The railways didn't start without any government support. The roads weren't built by the private sector. Certainly there were toll roads, but they were government concessions that allowed toll roads to have a monopoly. How many things in transportation have started without any government support?

The Chair: I have to stop you there. I'm sorry.

I will allow one more question per party, if you like.

Monsieur Aubin, do you have one question?

[*Translation*]

Mr. Robert Aubin: I would like to know if you have had any discussions with either the Quebec government or private interests about this immense project that the Charest government is bringing forward, the Plan Nord, which could lead to a consortium of mining companies interested in investing in a project such as this.

[*English*]

Dr. Barry Prentice: I'm very interested in this possibility. There's been some indication to me that they'd like to have a meeting some time in August with the people in Quebec. That's still being worked out. I'm certainly aware of the issue in the development of the north. This is clearly a technology that would serve a huge part of Quebec.

Just as in other parts of the country, there's a large hinterland in the north that is not available or accessible by road today, so it makes sense. It makes double sense for Quebec, because you also have the largest aerospace centre in Canada. There would be an industry to employ people to build airships and use them in the north. So there's kind of a double reason why Quebec should be interested.

I met some time ago with people there, but this has been a long process. Even to reach the place where we're speaking to you today has taken ten years of effort to raise this topic and get currency with it. No offence to the raising of the *Hindenburg*, but that's something that's etched in everybody's brain. They think of airships and they think of the *Hindenburg*. That was 75 years ago. Cars and airplanes weren't safe 75 years ago. So we can't dismiss an industry or a technology on the basis of one accident a long time ago.

It's a matter of looking at why it hasn't happened, and it really comes down to economics. As long as we can do everything with existing airplanes and other transportation systems, we don't even have to think about this. But times have changed. We cannot get to where we want to go. It is costing us a huge amount of money. And by the way, it isn't just a lost opportunity for resources. We pay dearly in health care costs and out of other pockets to support the people in the north because of the bad transportation that exists there. So we're already paying the money; we're just saying let's do it in a different way to reduce that cost and make it a better world.

● (1040)

The Chair: Madame St-Denis, do you have a question?

[*Translation*]

Ms. Lise St-Denis: Thank you, Mr. Chair.

Mr. Prentice, you briefly raised an issue on which you didn't elaborate, the environment. What would be the advantages of airships over other modes of transport, such as trucks and airplanes, in terms of the environment?

[*English*]

Dr. Barry Prentice: There are several environmental issues that are important. The first one is that you can use alternative fuels, and they don't burn much fuel to begin with, so they should not emit much carbon.

It's quite conceivable to have an airship that would be fueled on hydrogen, because the gas tank is not an issue. They're very, very big already. So air pollution would be one issue.

The second one of course is this issue of building roads through virgin territories and what it does to the wildlife in those areas, and what kind of protest you get from the people who don't want to see you building through a park or natural area or the aboriginal land claims that are existing.

As well, once you punch a road through an area you create an opportunity for predators to move along those arteries—whether they be four-legged or two-legged—and the caribou get affected. We have threatened species where there are plans to build roads right now, and this is a restriction on them.

There are major environmental issues.

The Chair: Thank you.

Monsieur Poilievre, final question and comment.

Mr. Pierre Poilievre: Transport Canada operates with a policy of technological neutrality. It doesn't pick technology and say this one is better than that one, or industry should go here and not there. It creates standard neutral regulations, which allow the best options to succeed and the worst ones to fail.

It's not going to be the role of the transportation department to step forward and urge industry to pursue one option or another. That being said, if there are built-in systematic disadvantages imposed by the absence of a regulatory framework—pilot licensing, cabotage protectionism—then I believe the department could work to solve those problems.

If you could provide it in writing, what we would need in order to make recommendations accordingly is a list of regulations that hinder you; a list of regulations that are needed; what transportation services the federal government purchases that airships could potentially provide; and finally, changes to airport policy that would allow our existing national airports, on a cost-recovery and user-pay basis, to make adjustments to their hangars to accommodate airships.

You don't have to do that now, but if you could provide us succinctly with that information we could potentially endorse it in our final report.

Dr. Barry Prentice: Thank you very much.

I just have one comment on that. The airports do not have any hangars, that I know of. All hangars are owned by the private airline companies, and of course none of those are suitable for airships. The airships can certainly operate at an airport—there's no restriction on doing that—and I believe they'd be quite happy to have the extra business.

I don't see the airports as being a restriction in any way.

● (1045)

The Chair: With that, I will thank you for your time today. I think it was certainly very enlightening for the committee. We'll have a follow-up on Thursday with one of the other companies that are in Canada looking for an opportunity.

Mr. Watson, on a point of order.

Mr. Jeff Watson: Mr. Chair, I just have a brief comment.

I want to thank you, actually, because this is a topic you brought forward. I mean that in a very sincere fashion. I've found it very fascinating. I don't think I would have known anything about this technology or what its applications could be. I just want to say I appreciate that you brought this topic forward for us to study.

The Chair: Thank you.

Well, as has been presented, the opportunity to provide services to communities that are less fortunate or opportunistic...this is one of the solutions.

I thank you, gentlemen. We look forward to future conversations. Thank you.

The meeting is adjourned.

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