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INTERVIEW TRANSCRIPT

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INTERVIEWEE: Louis Cuppens

INTERVIEWER: Angus Brown

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Louis Cuppens

Interviewed 14 November, 2006

By Angus Brown

INTERVIEWER: Canadian War Museum Oral History Program Interview with Lieutenant General Retired Lou Cuppens on 14 November, 2006 at Ottawa, Ontario. Interviewed by Angus Brown. Tape 1, Side 1.

CUPPENS: My name is Lou Cuppens C-U-double P (like in Peter)-E-N-S.

INTERVIEWER: Can you just confirm that we have both signed the legal release?

CUPPENS: Yes, Angus, we both signed the legal release.

INTERVIEWER: Can you give me a quick resume of your service career, please?

CUPPENS: Certainly. I was born in Neenaga, the Netherlands during World War II. And, just after high school, I joined the reserve component of the Army and Anti-Aircraft Regiment. And ... became an Artillery Officer later on. Stayed there until about 1969, when I went off flying and flew various airplanes and ended up in 10 TAG, Tactical Air Group, which I became the Commander of. After that, I became the Deputy Commander of the Air Force, and then the Deputy Commander, Commander in Chief of NORAD. Is that succinct and short enough ? [laughs]

INTERVIEWER: Approximately what times where you in all those major positions?

CUPPENS: Each posting, whether it be Commanding Officer or Deputy Commander, most of them were three year tour lengths.

INTERVIEWER: And so, when you were Commander at 10 TAG, what year would that have been?

CUPPENS: Commander at 10 TAG was from ’89 to ’92.

INTERVIEWER: And, after that?

CUPPENS: From ’92 to ’94, I was Deputy Commander Air Command. And then from ’94 to ’95, I was the Combat Director of Operations in NORAD.

INTERVIEWER: As a two-star?

CUPPENS: As a two-star. And then in ’95, I became the Deputy Commander in Chief of NORAD.

INTERVIEWER: And you stayed there until?

CUPPENS: Until my retirement in ’98.

INTERVIEWER: OK. Can you just outline the factors and circumstances leading up to your selection as D CinC NORAD?

CUPPENS: Certainly. Just after I finished my tour as Commander of 10 TAG, Tactical Air Group, I went to Winnipeg as the Deputy Commander Air Command, as a newly promoted two-star. There I worked for two three-stars, one was Dave Huddleston and the other was Scott Clements who I had known for a long time.

During that period of time, I had career interviews, usually once or twice a year, with the then Director of Senior Appointments, Mr. Peter Reney. And, in one of those interviews, I suspect it was the second year, probably in ’92, ’93, he let me know that the plan, at that time among the senior officers was for me either to stay in Canada and become the Commander of the Air Force, or to a job like DCDS in NDHQ, or D CinC NORAD. And, which was my preference? And, I said, “Well, my preference would have been NORAD”, by a long shot because of the operational impact that it has.

That was confirmed again for me in ’94 in an interview. And, I then stayed as a two-star. And, that was explained to me as well because, after three years as a two-star, it was expected then amongst your competing colleagues that you would move up one. It was explained to me then that it was a long in the tooth two-star who was going to get promoted to a three-star position for one year because his time was running out. His name was Dave O’Blenis. And so, I would have to wait one more year. And so, I was sent down to Colorado Springs as the Combat Director of Operations, which was good because in hindsight it kind of prepared me for all the things that had happened when I was Deputy Commander in Chief. So, that was, in essence, the selection process.

I know when it was announced, I was contacted by the Chief of Defence Staff, who congratulated me. And, again, he had known me probably since the time I was a colonel. And, there were no issues between us. He didn’t ask me to come to his office to be briefed because the transition ceremony down there had him in attendance. And he again shook my hand after the ceremony. And, that was the last sort of consultation I had with anybody concerning my job.

INTERVIEWER: So, you had no mandate as the senior Canadian officer in the United States. Is that correct?

CUPPENS: Correct. In fact, I was musing over it before coming to the interview. When I was a colonel, I had been selected to command the Multi-National Forces and Observer in the Sinai. And, I was brought to National Defence Headquarters for about four days. I

was briefed by intellegence people, operations people, personnel people, pay people, operations people, a whole series of briefings. They were political. There were briefings by Foreign Affairs, Consular Affairs. I had none of that and yet I, as you say, I was the senior ranking Canadian officer in the United States. And I had to work issues in that position, separate from the Deputy Commander in Chief of NORAD. Now, although I did, there were no surprises. I knew the issues. I guess the folks had made sure of my military upbringing, that I had encountered most of these issues.

INTERVIEWER: I would like to come back to some of those points but, right now, I'd like to ask you about the actual transition into the D CinC NORAD position. I guess it was pretty straightforward since you had already been there for a couple of years.

CUPPENS: Yeah, the bigger transition was probably me coming out of Winnipeg as the Deputy Commander of Air Command into that job. And, I can remember that vividly. I went down, just days before Good Friday of '94. And right away, I was subjected to a battery of briefings by Canadians who were on the NORAD staff.

We had a training staff, at the time. And they taught me about various related events, some of the American processes, and especially the Command Computer Processing System that we were using. You actually had to play with it. And, rehearse with it. And, practice with it because the culmination of all of this was what they called the "Over the Shoulder Checkout" which was done, in my case, by the Commander in Chief. After that, in all of my time in NORAD, I did all the Over the Shoulder Checkouts for the subsequent CinCs. And, the person that replaced me, George MacDonald.

I found the information given wasn't heady in politics or in operations. The bigger problem was learning this rapid processing system that was in use. And, understanding the consequences of error, if you made a mistake in the processing, because you were the last human in the loop before a bunch of automatic steps were taken.

And so, that little training – I remember I did my Over the Shoulder Checkout by General Chuck Horner who had been the Air Component Commander in the Gulf War. And, we did it about three o'clock in the afternoon Good Friday. What an ominous time to have a checkout. I was quite, actually surprised, in hindsight again, that this type of work would be going on, on a Good Friday. But, the checkout was really a series of small events on a computer that eventually culminated – they started showing missile launches between China and Russia in this processing system that uses space-based technology. And eventually, the missiles started turning. And eventually, North America gets a shot. And then, it culminates with a massive missile attack.

This was what I call an Armageddon scenario test. But, you had to weave your way through each item making sure that all the parts of the NORAD system and the Canada-US command system were engaged. And, you had to understand that. And, you actually had to rehearse this several times. But, in essence, one of the difficult parts was you had to communicate. And things were happening while you were communicating. And so, it's like walking, chewing gum and kicking a soccer ball all at the same time. But, the

only luxury I had was General Horner. Instead of having to call him on the telephone, he was sitting right beside me. And, he simulated picking up the telephone. But after that, he kept me kind of relaxed during the drill. But he knew that I understood the system.

I then flew back home and gathered up my belongings and came back just at the end of June. And then, of course, for that whole first year, I was engaged in a variety of NORAD type events, computer upgrading. In fact, I overhauled, as a two-star the training system. And, formalized the training into what is now a three week course for people that have never had an assignment at Colorado Springs. Which, in essence, was an understanding of the American Command and Control System, space-based technology and the computing systems that were in use. And, as a result of that overhaul each of my successors had to some varying degree, a compressed version of that, but it was structured. Prior to that, you could actually miss. And, some of my Canadian subordinates had missed bits and pieces of training, especially in the sense of intelligence gathering systems which you had to understand. Yet, these systems were classified at such a level; you couldn't put it in a text book. There were that type of sensitivities attached to them. So, you do an oral brief to the individual, and make him sign, like you did, a waiver saying that you are now committed for x number of years to silence.

INTERVIEWER: Although it's not part of your D CinC NORAD job, can you give me a brief overview of what you did as a two-star Major General Combat Director?

CUPPENS: Certainly. The Combat Director was one of five Directorates in NORAD. Perhaps I should actually go back a step and give you a little bit of the structure.

First, we are quite familiar with the structure of the Canadian Forces. And, it did not change while I was down in the States. Minor subordinate level changes. But overall, you still had the three military components, army, navy, air force, commanded by three-stars. In Canada, we had a DCDS staff engaged in operations and in equipment acquisition, and a Vice-Chief, and all those entities, and Material Group and the Policy Group.

In the States, they were quite differently structured. Besides this complex entity of the Pentagon, which embedded the army, navy and air force Chiefs of Staff, and they were Chiefs of Staff. Their system is very much in big bold print. The job of the services was to organize, train and equip. And, that message was not clear back in Canada.

In Canada, there were still operational elements in the army, navy and air force. And we, in essence, deemed one of those commands to be the lead. And, they brought along the others in a joint sense. Beyond that, the structure – and of, course, organized training of the services. And then you had what they call the Joint Chiefs of Staff which were supported by quite a number of entities. Then you had what they call the Commander in Chiefs and, unlike in Canada, this organization had occurred – there was an act back around 90's timeframe, double name. I can't remember the name. But, it was an act in Parliament [probably means Congress: ed] which required that all operations be done jointly.

And, they established these Commanders in Chief geographically around the world. Starting – I'll just give you a quick thumbs up – starting with CinC EUCOM, was double-hatted as SACEUR. Then you had CinC CENT who was living down in ... Florida, his Joint Headquarters was there. He's the one that commanded the Gulf War. But, he was responsible for everything beyond Israel and Africa, which were EUCOM. And you go across. And he had everything almost to the Pacific. And, you had a CinC PAC, responsible for the Pacific Rim countries all the way to the shores of the United States. There was also CinC SOUTH who looked after Hispanic America and South America. Then you had CinC SPACE. You had CinC TRANSCOM. You had CinC STRAT, Strategic Command. And all these Commanders in Chief were given a clear mandate as to how to conduct operations in their area.

They had to develop contingency plans. They were all held in file. Now, in my time, they are all on computer. So, you had all sorts of options in each geographical region. There was no CinC North America. So, the area of Canada, United States and Mexico, had no one Commander in Chief responsible for it. But, there was a thought that perhaps, CinC Atlantic Command, who did everything from the beaches of the Atlantic all the way to Europe, might have that responsibility. But, it was not clearly defined.

The United States had a couple of legislative documents that explained how all these organizational entities worked. And in there, there was a small paragraph, in that same document that said CinC NORAD. And, they called it US Element NORAD, because this document is also classified and it was not releasable to foreigners, and so, I won't give you the name of the document either.

But in this structure, you get to understand how these entities worked. And, one of the key roles or targets for these gentlemen that were CinCs was, they had to shape the political and economic and military environment in which they were given responsibility. So, you would have CinC PAC (PACOM – Pacific Command) actually working the Pacific Rim countries – China, Mongolia, North Korea, South Korea – shaping the political domain. Now, if you ever presented that notion to, at the time that I was at NORAD, to the Foreign Affairs Minister of this country, that I should have political responsibilities, they would look at you like you had two heads. But, they physically did that.

And, to illustrate further, at the time that I was there, they had a three-star general, United States Air Force, by the name of Myers who had been assigned by Shalikashvili, the Chairman of the Joint Chiefs, to Madeleine Albright's organization. And she was the Secretary of State. This three-star was her military adviser and her link to the Department of Defence. But also, he was over there as the eyes and ears of the Defence Department in Foreign Affairs. And when you send a three-star to work there, he just doesn't go over there with his briefcase. He has a full staff. And so later I met Dick Myers several times. And, as you know, he became the Commander in Chief of NORAD just shortly after I departed. So.

INTERVIEWER: Later he became Chairman of the Joint Chiefs.

CUPPENS: Chairman of the Joint Chiefs, just retired last fall. So, you have a structure quite different. And in these structures they were working a joint system and each of these commands were joint. So, you have the commander of the army, navy and air force providing troops to these CinCs in the various contingency plans. They would have greater numbers in one and less so in the other. Even NORAD had troops assigned to it on a permanent basis or on a contingency basis. The numbers would go up and up and up. So, NORAD was really functioning as a joint command, whereas the Canadian forces were not. And, you'd have forces, during my time, in Colorado Springs.

The view, I suppose, of the senior of my own equals, was that if Lou had any problems there, he would go to the air force because in essence, NORAD was air force. It was founded by air force. They had just forgotten that in NORAD's early days, we had air defence artillery assigned to it. And, Canada didn't have any air defence artillery. So, perhaps out of practice, we fell out of this notion.

But again, back in my time as a two-star, not only did I overhaul the training system, I started looking at the opportunities that were present in training Canadian officers and NCMs in the business of space and in high tech affairs and research and development. You name it. So I started looking at opportunities to bring army and navy personnel to NORAD, which I accomplished.

INTERVIEWER: So, what would you have done as a Combat Director?

CUPPENS: Sure. A Combat Director would be one of five Directorates in NORAD organization. There was Personnel, Intelligence, Operations, Logistics and Long Range Plans, if you will. My job was strictly operations piece on the NORAD side. As the Canadian, I was the number two in the United States command hierarchy. So, as Combat Director, I had responsibility for all the contingency plans that NORAD had put together and the day to day operations function of the command. And, they worked, very much liked the British worked, on Operations primacy. So, whenever we had an escalating situation, I could call in the other five Directorates, as we would.

Stepping back just one pace, where we lived at Peterson Air Force Base, there were three major commands functioning. There was NORAD. There was US Space Command. And, there was Air Force Space Command which is a subordinate to US Space Command. Air Force Space Command and US Space Command and NORAD were all commanded by the same guy, one Commander in Chief, who was an air force officer. Up until that time, no other service had commanded NORAD, other than air force. In fact, the unwritten piece was the Commander and Deputy Commander had to be rated pilots. And, that was sort of the operational imperative.

So, this one four-star general was a very busy man. So, he had underneath him, deputized for him; a three-star commanding US Space Command, a three-star commanding Air Force Space Command and a three-star commanding NORAD, a

Canadian. And, these fellows worked essentially as CEOs. They ran the organization day to day. And, it was their job to keep the four-star up to speed on the major events because this four-star was flipping back and forth in his other capacities at the Pentagon, probably two, three times a week. And so, he virtually left these three three-stars in command. So, they in turn beneath them had a number two and a three IC, if you will. And so, the Canadian two-star became the defacto Deputy Commander of NORAD day to day.

INTERVIEWER: Did you find that having the US CinC double or triple-hatted was detrimental or helpful?

CUPPENS: I didn't notice that it ever impeded his judgement or delayed a decision from him. Probably the biggest thing we had to contend with was the absenteeism. The fellow was constantly on the road, whether he was out visiting his other parishes or he's in the Pentagon.

Remember, you know, we used to say in great pain – we were all involved in the billion dollar downsizing of the Canadian Armed Forces. They were doing the same thing. Under Clinton's administration, their military declined immensely. They discarded wholesale divisions, air bases, you name it. And, this CinC was involved in that, too, because he was property owner. He was one of those organized, training, equip guys on the one hand as Air Force Space Command. And, he was a CinC in his own right in space. All things 'space' belonged to him. And, plus that, he was the Commander of Binational Command and NORAD.

He entrusted a Canadian to look after things NORAD and operation things NORAD. But, you know, you were required, as is the custom, you were required to keep your boss informed about the major events. He didn't want to know about the nickel and dime stuff.

So again, as a two-star and Director of Combat Operations for NORAD, you were responsible for the training and the equipping and those functions of operations that were conducted by NORAD.

Back a little bit in history, you understand that NORAD was, essentially, up until about the early, mid '60s, an air defence organization structured with immense assets across the country to counter the Bear bomber attack that was imminent. With the launch of Sputnik, all of that changed. And then, the era of the ICBMs. So, you had essentially a 24 hour, seven day a week operation going on with people doing it. Whether they be the contingency planners or the people manning Cheyenne Mountain, the Operations Centre, these all worked for you.

Now, as a Canadian two-star, Director of Operations, I had a one-star American as my deputy so that occasionally I could go away, or occasionally I could become sick or something. And, this one-star, a number of them worked for me, was essentially my guy

that looked at the Mountain. I had him become the specialist in things, the processing systems etc.

Also, you had on a day to day basis, the combat operations people in Cheyenne Mountain would run at a strength of about 600 to 1000 people working there. A shift, one whole shift, would be about 400 folks, and we had five continuous shifts. So that, you get an idea that there would be at critical times of the day that there would be double that number in the Mountain handing off to each other. And we didn't change everybody at the same time. And, it was quite a set piece apparatus.

And then, you have the challenge in the world of the time zone changes. The major threats to North America are working at six hours difference from you. And so, most Russian ICBM and missile launches occurred at 2:00am. Of course, if you take that back to a peacetime domain, in Canada, for example, in my time, the Operations Centre at National Defence Headquarters is manned by a captain and two corporals. The Pentagon had a situation room manned by probably about 150, notwithstanding the fact that the Whitehouse Situation Room was always up and manned as well. So, I had responsibilities to deal with all these operational entities. All the other CinCs in the world, including our own National Command and Control Systems, 24 hours a day, seven days a week. And, that was a major drain on both your physical stamina and your mental stamina.

INTERVIEWER: I'd like to get into the mechanics in just a little bit, but I wonder if, first of all, you might just succinctly describe the geopolitical situation in which NORAD was operating during your tenure as a D CinC.

CUPPENS: Yep. When I was there, the Cold War had ended. Back in '89, '90, the [Berlin] Wall came down. And so, both Canada and the US were trying very hard to make sure that now Russia and its affiliated States, the former USSR, were able to demobilize peacefully. That the weaponry that they possessed was properly safeguarded. That technologies were properly safeguarded. They were still considered, even though they were viewed as friends of the western world, they were still considered to – while they didn't have any hostile intentions, they certainly had hostile assets.

INTERVIEWER: There were still potential weapons.

CUPPENS: Oh, huge. And, START-1 is in the process of occurring. They're meeting START-1 targets.

INTERVIEWER: START-1 being?

CUPPENS: Strategic Arms Reduction Treaty, and there was a hierarchy. There was a START-1 which demanded that, for instance, numbers of Bear-Gs and B52 bombers would be diminished to a set-piece number. The number of ICBMs would be drastically reduced. And also, all ICBMs had to become single warhead devices as opposed to multiple independently targeted re-entry vehicles which was the system in being at the

time. There are numbers of nuclear submarines that were to be reduced. And then, against that backdrop, you had numbers of stationed divisions and air forces and all that stuff stationed in Europe had to be reduced. So, you had both the Western World and former Soviet Union working hard to meet these, showing every intention of doing that. There were no other players in this, but START was signed by US and Russia.

You had the Ukraine and all these other countries – Czechoslovakia, the former Czech. Republic, you had Yugoslavia, all these other countries are falling apart. And stable governments are falling, and yet, some of these possessed weapons of mass destruction. So, that was one big fear, the fact that you'd have somehow the weapons of mass destruction falling into sinister hands.

Move further away. Other types of threats existed, where North Korea, who wasn't paying attention to anybody, whether they bring diplomatic pressure to bear. They were giving every sign of, 'No, we are going our own way'. You had what we call in those days, using our terms 'undeterred actors' wandering the world. People like Khadaffi, Sadam Hussein, the political entity commanding Iran who had been a religious person but at my time he wasn't. You had also the ongoing strife between Pakistan and India, both attempting to find missile technology that would allow each one to throw a nuke at the other one. You had the whole African continent in various forms of strife. I used to stand and give briefings in NORAD saying, "It may seem to you to be a perfectly peaceful world out there, but as we speak, there is about 110 wars going on". And I would point them all out on a map.

China was at that time showing signs of transition to becoming an economic power. It had a significant military but there were no hostile intentions being demonstrated. They were hostile to espionage but other than that, there wasn't any.

Back home, in my watch, we had the change from the Conservative government to the Liberal government and all that that brought, the continuing quest to harvest dollars. In the States, they had the change in government, as well. The Clinton administration was in. I was let to see, because of my position as the Deputy of a CinC, and, his job as being influencing the political landscape. I was let to see, all the State Department traffic that you would expect a major command would see because State Department had embassies world wide. And so, you'd need to get their intelligence. And that would flow into us, including telexes from the embassy in Ottawa, telling the Americans all about what the Canadians were up to. And some of it was not very complimentary, I can tell you that.

I was shown one, when the Chrétien administration came to power, which was about a five page assessment of each individual in the cabinet that was of concern to them. They shared it regularly with me. I did not share our own because for some, again, strange reason, in our country, I was not allowed to see the embassy traffic of all the embassies of Canada. I was only sent the one from Ottawa. There was nothing coming from Foreign Affairs. And, again, in our structured Department of Defence, in those days, it seemed in people's minds, I would guess, that that type of information would come to me from the ADM Pol Group. ADM Pol Group certainly never sent any.

INTERVIEWER: That brings an interesting point. Can you tell me about your links with Canada and Canadian officials in a little more detail?

CUPPENS: Yep, shortly after I became the D CinC – sorry, I may as well go back to the two-star era. I took the time to go to Washington first because both my American and Canadian colleagues wanted me to meet the players. And so, I got to meet all the hierarchy of the US Administration that I would deal with. I met Madeleine Albright. I met Secretary of Defence. I met the Chairman of the Joint Chiefs and each of the Joint Chiefs. I was given briefings by them about the strategic situation globally.

And then, I went over to our embassy and met our Ambassador. At that time, his name was Chrétien, the nephew of the Prime Minister; A very charming individual. He gave me a sort of a Canadian trade talk about what the embassy was doing in Washington. He was well aware of two major issues that Canada was concerned about. One was the ABM Treaty and its future. And the second was Ballistic Missile Defence and the NORAD renewal tied to those. I met his officials. There was a two-star Canadian who was there as Defence Attache, also a colleague of mine. And I met all of their staff, and all the consular officials.

So, I was able to build enough of a rapport with them that if I was concerned about an issue, I could call them directly. Again, you could call them directly up until 5:00pm, as Lou Mackenzie has pointed out many times. In Canada, everything stops at 5:00pm. So do things in the United Nations stop at 5:00pm, but not so in the US military system.

Back at home again, in the Defence Department, again because of my rapport, I had the home phone numbers of the Chief of Defence Staff, the Vice Chief when I went, Deputy Chief, my air force colleague, and the operations NDOC -National Defence Operation Centre. I had a number of numbers for them, classified or non-classified.

As it turned out, very early on, as I was a two-star and I was doing a ... continuity shift in Cheyenne Mountain as a Command Director, which in my watch, when I went down there, was all one-star generals but in my watch became colonels. The conferences to discuss events that were to be called up were usually all answered by general officers of some sort, in the US system or in the British system.

In Canada, after 5:00pm, would be a captain or corporal. And it offended me so much. And I knew there wasn't any decision making taking place in Canada. And there wouldn't be much intellegence applied to any situation. I just took it upon myself to say, I wouldn't embarrass my country by having a corporal or a captain answer the telephone in the presence of other people. So, I actually disconnected the system. They did get the automatic feeds.

But on conference calls, also again because of a bad decision which has been rectified, Canada chose not to hook itself up to the US Red Switch which is a classified secure telephone system to a level of top secret. Canada chose not to buy into that, not to

purchase the items even though Canadian officers in SACEUR and elsewhere in the world were using this system. Canada was staying with the STEW-3 which is an independent telephone with a scrambler. And, it was largely, barely compatible with the Red Switch system where you physically had to conference Canada in as an extra step every time. That used to take about 15 seconds or less. And, that 15 seconds was precious when you only got two minutes and 15 seconds overall. And then the quality of the communications was poor.

So, for that reason and others, I just chose to disconnect them on my own part and had told every other Canadian that was in charge anywhere, that if certain types of events took place, they were to call these generals at their homes. I spoke at length with people who were on the staff of Ottawa, at my rank, and they were busily trying to change that. And it did change while I was a D CinC. So, at the end of my watch, I was very happy to hear colonels answering the telephone as opposed to corporals.

INTERVIEWER: Was NORAD only concerned about threats outside North America?

CUPPENS: No, we had a number of experiences with events domestic in both countries. There were already in various protocols and in various operational manuals, the case of terrorism, aircraft hijacking, bombs, unexploded devices, defections, what to do about disasters whether they be oil spills off the coast, whether they be ships sinking, air craft crashing, a full range of domestic events. So, we were not only looking out but looking in as well.

Now, the limitation on looking in is – now ... excuse me, you also had the drug trade. We were very much involved in it. We were involved – in fact, I personally attended quarterly meetings of, I call them, the drug czar of the United States. He is the retired general officer or admiral. And, I would go down to meet with him. We would talk about how we would operate.

In fact, one of the operations we got ourselves involved in was the deployment of a portable radar system from Canada, looking at one of the countries that was involved in the drug trade. And, as a result of that deployment, we were able to capture and incarcerate a whole mess of people that were involved in it.

Unfortunately, there were some sensitivities attached to us doing that and it wasn't repeated. Foreign Affairs wasn't consulted in the deployment and resented it. So, we still had our air force assets able to intercept and follow aircraft but we weren't able to contribute radars. And the Americans had lots of portables. It was just our way of doing a share. So we were involved heavily in the drug trade intradiction and interception.

This involved, and this is what surprised my Canadian colleagues again, we were able to employ assets of any military type. I could use the radar of a ship to track a drug runner. I could actually see in the command centre, on my computer, the radar picture that was being provided to me by the destroyer, Canadian or American. We are able to have the

Coast Guard chase vessels or aircraft. And, we had our own aircraft, including the Civil Air Patrol, able to follow, RCMP law enforcement agency.

I was getting to the point that there was a limitation on internal domestic operations in the States. They have a law called '*posse comitatus'*, which doesn't allow federal forces to be employed against US citizens. And so we also have a limitation there in intelligence gathering. You could not, by law, use your own surveillance devices on your own people unless you had a court order for each individual circumstance. That was not the military's mandate. The mandate of the FBI was internal domestic operations.

And so, you weren't given a detailed intelligence picture of what's happening inside of Canada or the US. Every now and then, you would get a sniffle of this from our own Canadian intelligence sources, especially when weapons or drugs were interdicted and the follow on investigation revealed other data. Luckily, those in the intelligence world knew we could use that. In fact, our intelligence centre in NORAD was jointly populated by Canadians and Americans on my watch.

INTERVIEWER: From other agencies, you mean?

CUPPENS: In fact, in my intelligence centre, I had access to and employees from the Drug Enforcement Agency, the Central Intelligence Agency, the National Reconnaissance Office, the Customs and Immigration people, the Emergency Management Organization. They were all on my intelligence system. I could access anything at any time.

INTERVIEWER: Did NORAD, at this time, have a good radar picture from FAA, Federal Aviation Administration radars?

CUPPENS: Yes we did. Perhaps I should step back and give you a little bit of an expose on the nature of the surveillance devices that NORAD uses, if that's not too ...

INTERVIEWER: No, please go on.

CUPPENS: There are two facets. As you remember, the NORAD role on my watch was aerospace warning and air defence. I make that distinction because aerospace was everything that moves through the medium of air, surface, sub-surface. It didn't really matter, but, anything that would end up with an aerospace type of event. To find those threats, we would use, besides the world wide intelligence information we had, we would use the information we had. We had space-based surveillance systems. Primarily, the Defence Support Program satellites of which, at my time, there were six in geosynchronous orbit. There was also, I would call it ...

INTERVIEWER: I was just going to say; those satellites had infra-red detection?

CUPPENS: Infra-red detection. They also had other things on board such as nuclear detection devices that would pick up beta particles if it was a below surface burst. There

were three other satellite systems. Sorry, more than that, three special satellite systems which I won't give you the name of. But, they were far more accurate in the infra-red spectrum than the Defence Support programs. They were newer. And, they also had other gadgets on board, some of them being other surveillance systems.

There were probably in the order of 30 low flying reconnaissance satellites under the command of the National Reconnaissance Organization. And, these would either be radar, infra-red or visual systems, TV.

There were a number of other satellites out there that would be involved in intelligence collection, whether they be audio or video. And, there were a host of them and they would either funnel information through the NRO or through the CIA, depending on how you access it. Even to the point that some of the more peaceful satellites, like AGRASAT, RADARSAT from Canada, the French radar satellite, those looking at icebergs or vegetation; all of those, actually provided intelligence at the same time. But, again, folks didn't talk about that. Of course, back home, the word of our Foreign Affairs was, "Let's make peace, not war", and, "Don't talk to me about that sort of thing."

So then, the aerospace detection and tracking and warning systems, all these were engaged with some degree of difficulty, I might add, especially, the National Reconnaissance Office. I can come back to that if you remind me.

That was the aerospace warning piece. The air defence piece was – Canada had never signed up to defend the aerospace. This was the nature of the Ballistic Missile Defence system. Canada was very on line saying, we'll watch the technology as it develops, but we had problems signing up to something that shoots stuff up in space.

INTERVIEWER: So, technically, Canada was really only concerned with air-breathing threats. Is that correct?

CUPPENS: The defence against air-breathing threats but warning through all the spectrum. Defence was only the breathing threat which was, in essence, perceived to be – the biggest threat was the Bear bomber. There were other air-breathing threats out there. There were the drug runners. There were the – what would you call a Cessna 150 loaded with explosives or bacteriological agents with a remotely piloted system on board, no pilot, and, it's aimed at downtown Los Angeles? Some would call it a cruise missile. Others would call it a weapon of mass destruction. Those threats were very real.

In fact, we were watching it on the internet as university kids were given these challenges to make these things. In fact, the US Air Force Academy had the kids, the young students – they were given a pile of money, less than $1,000.00 each, to design and develop and prototype a cruise missile as one of their class projects, unclassified. And they all succeeded. They got all the information on the internet.

So, now, back to the air-breathing threat again, that was the type – remember, you still got Cuba living south of the United States. They were considered a major threat to them,

still. You had all the illegal aliens, including the ones that landed in Nova Scotia, that came walking down the road from some third world country wondering why the people weren't welcoming and giving them parkas. And they had these people from Cuba, migrating by the hundreds, presenting a challenge to NORAD and the United States authorities. So, that was the nature of the air defence thing.

Air defence was also internal, such as hijacking and cooperation with the Federal Aviation Administration. To effect that, in Command and Control, this space-based system would not help very much. They would be able to detect if something crashed because of the heat. But, for the most part, space-based intelligence and surveillance would help you. But the primary source was the North Warning System in Canada, a series of short range and long range radars all tied together with a common feed into North Bay and onward into the NORAD system. And the United States, they had all what they call the Joint Support Radars, which are FAA and military radars, all the way from the State of Maine right around to Washington State, including Alaska. And there were various types of radar.

All of these radars that I have now talked about, the ones that detect the air-breathing threats, all of them are not skin-painting radars. They are all transponder-based radars. There were....

INTERVIEWER: That means that the target has to transpond a signal. Is that right?

CUPPENS: Correct. So, there were some – I had used the word all – there were some in that whole array of radars that were skin-painting radars but not many. Internal to the country – domestic United States, and domestic Canada – there were also, mostly transponder-based radar, as opposed to skin-painting radars. And so, it is quite possible that you would have a target emanate from without that would be picked up by a skin-painting radar. Sorry, I mis-phrased that. All the external looking radars were skin-painting radars, they would illuminate any target. And you would be able to see it. The domestic radars, on the other hand, internal to the country were not skin-painting radars, for the most part. They were transponder-based radars.

INTERVIEWER: So, they were more compliant control radars.

CUPPENS: Right. And so, targets coming into North America would be picked up by our massive radar fan, normally by several radars. And that data would be reduced by our processing system to single targets. We would filter out, right away, just by putting a filter in the computer, all bonafide traffic because there are 7,000 flights in and out of North America every day. So, you just filter all those out. You could take the filter off any time you want and your screen would light up with all these targets but we were looking at those who didn't want to be seen. And, especially drug runners or the Bears. And, that's how the system worked.

Now, the reason I took the time to explain that air-breathing threat was – I can remember one event when I was a CinC, I was doing again, a proficiency shift in Cheyenne

Mountain. One shift, I think I went on about 10:00pm and came off about 5:00am and I was commanding this crew when we got a call from the FAA asking for assistance. There was a protocol. We had the same protocol with Transport Canada, or NAV Canada now, asking for NORAD assistance. The nature of the type of assistance we would do was to go up and identify a target and then deal with it since they could not. They had a compliance issue.

Another issue which was under this protocol was something considered dangerous to flight. And this is the one I am coming to. One evening, on this particular shift, we had the University of Wyoming in Laramie phone up FAA looking for our assistance. What had happened, the senior class of that University had designed a dirigible. A huge dirigible, about the size of a football field and it had all these gadgets on board including a transponder, so it could be tracked. It had a command and control system on board, and it had the ability to fly under control, but from ground station.

INTERVIEWER: Interview with Lieutenant General Cuppens. End of side 1

END OF SIDE ONE

INTERVIEWER: Canadian War Museum, Oral History Program. Interview with Lieutenant General Cuppens. Tape 1, Side 2.

INTERVIEWER: General, you were talking about the dirigible.

CUPPENS: Yeah, I'll go back to it. It was about the size of a football field. It had its own transponder on board. It had the ability to be piloted from the ground. And when I say pilot it, you send it command and control information and little generators would open up, either to push more air in or let more air out. And that's how they control its altitude.

Unfortunately, shortly after this gadget got launched late one afternoon, it escaped. The transponder failed. And so now, this thing is let loose in the dark. And it's heading with the trade winds. And so, they call the FAA asking for NORAD assistance. Well, our first challenge is: where is it? And, as I mentioned earlier, the domestic radars, most of them are not skin-painting. And so, this thing's transponder has failed. And so, we started looking around our inventory of information. We found all sorts of radars that we could use. We found weather radars that are basically return radars.

And, we did locate the object. It was zipping along the jet way heading to the east coast of North America where all the dense air traffic is. And, of course, as it's travelling across the States, it's also a risk to westbound aircraft, eastbound as well. And, this thing, just to give you an idea of its flight path, was flying as low as 1,000 feet and as high as 15,000 feet, 115,000 feet. We had pictures of it as we picked it up. So, we sent up an AWACS, an airborne warning and control platform, which we based in Oklahoma. And it also was tracking this thing.

Your next step is: how do you deal with it? You've got to warn all the civil traffic. You've got to do as much prediction as you can. Of course, we aren't in the business of tracking dirigibles. And so, it caused me to call in a lot of people on this night shift, including my CinC who was in Washington at the time. I called him about this particular problem and I said, "We are going to deal with it." And I said, "We have to get permission from the Pentagon to shoot it down because eventually, it will leave the east coast of the United States and it will be in the current heading towards Europe and all the air traffic coming this way." So, we started working up – I had a crew in from the planning shop working at rules of engagement: where you can shoot it down, how you can shoot it down? And, we had to send those to the Chairman of the Joint Chiefs to get approval. And all that worked. We just took time.

And then, every now and then, this dirigible will disappear because of gaps in our air coverage. It disappeared finally, and we had fighter squadrons standing by at Langley Air Force Base ready to zip out and knock it down. We were going to shoot it down over the water. And, we had the AWACS team, tankers, everything lined up, when this thing, over Virginia disappeared near a place called Roanoke. And I can remember that was our last contact with it. And we don't know what happened. You know, you surmised that it crashed. It could have gone up though, to 115,000 feet again. Little valves were opening and closing on their own.

So, we just terminated the alert. We had figured it had crashed. We had no other contacts anywhere. And, given time, the skin-painting radars would have picked it up again as it crossed the east coast. And none of them saw it. About, just as a sequel at the end there – but that was just to demonstrate the ability to track airborne objects.

Of course, it relates to some things of 9/11; the ability or inability to see threats like that. It also relates to the cooperation we had with the FAA. We had tremendous cooperation in my time. In fact, we had FAA plugged in. They weren't physically co-located with us. They had a liaison officer with us, but we could contact them just by pressing a button. It says a lot to the ability to predict, the talents and the ability of the staff. But we were given split second notice by the FAA at various times during my time down there. But it's just illustrative of one particular event.

Sequel to the story; about three days later, we got a call from ACOM, Atlantic Command in Norfolk, where some farmer had phoned in and found bits and pieces of this fabric skin and metal in his field that he was out ploughing. And then we determined where it came from.

So, what I have done is, I have tried to paint you the air defence systems in use, versus the space-based systems in use. My view and vision was always that we should have had the mission also of aerospace defence because the technology was coming. It was timely to start discussing it. And I proposed it many times to our military and political masters. And the debate continues today.

INTERVIEWER: Would you say that radar coverage of North America was good? And I'm thinking here – you haven't mentioned, though, and I assume they were included – radars such as OTHB and BMEWS and Fat Albert.

CUPPENS: Yeah. The OTHBs had outlived their usefulness in the sense that they were expensive to maintain.

INTERVIEWER: OTHB meaning, Over The Horizon Back Scatter.

CUPPENS: Over the Horizon Back Scatter. There were four in use when I went there. We knocked two of them off the line, and, only as an economic measure. We could bring them back up if there was ever a repeat of a Cold War situation. And they were employing the technology that we had in other areas. And I just don't go into that, but the ability to flop down a radar fan using the ionosphere. There was other stuff, by static radars, for example. The BMEWs system is essentially a system to track submarine-launched ballistic missiles. And they were not really of any value in the ... air defence role because the aircraft wouldn't be flying generally in the fans that these were oriented towards.

As I said to you, we could get radar data and inputs from just about anything that had a sensor. We could actually feed it in. We developed the methodology to do so. Again, I could explain it as a research and development system. I actually telegraphed that information back to National Defence Headquarters to acting DCDS at the time, Ray Henault. They had these things call Ten Cap.

The Americans went back – if the Americans had the scientists of today developing a system for them, they would run it in competition. They would pay the developers. And, as you get closer to finding the solution that you are seeking, other technologies were discarded along the way. You actually owned them.

So, the Americans have entered a system called Tactical Exploitation of National Capabilities. And they went back into all of their research projects and found all sorts of amazing technologies that they had discarded. One of which was the ability to fuse various data from different types of sensors. This ability to fuse allows today, and allowed during the latter part of my watch, you to see a consistent picture from an infra-red warning satellite, or a communications satellite picking up sound, and also, video or radar, or both. Fuse all that together and get an indication of what's happening.

I used it extensively during an operation in the Gulf of Mexico one time, on an operations watch, a big event. And, we had no difficulty in detecting where it was. I further used one of our organizations – I can't remember its title any more. It's based in Texas and it's a radar reduction unit. It will take those air defence detection radars and will actually separate each of the radars to go back and look and see what the radar physically saw. Because, what is happening when you are getting these feeds in through the computer system is, they're reducing the data to one. And they are discarding erroneous stuff because we have told the computer what it is we are interested in.

INTERVIEWER: Just want to go and talk a little bit about 'an event', be it a missile or an air-breathing event. I'd like you to describe the type of communications. What was data link? What was voice? What was talking to the guy across the room? How would that sequence work and what would each player see?

CUPPENS: Ok. Let's take a missile event because they are both separate. They are dealt with – in fact, all the events that you would ever think of, whatever they are, are recorded in a checklist. And, if you ever looked at a movie – I still have a video copy of it, called Modern Marvels, the History Channel – you'll find myself narrating, or Dave Bartrum, or others. It depicts very accurately, the differences between these two types of events.

So, let's go to missile event first. The sensors are the Defence Support Program satellites, and a couple of special ones and, for the most part, the intelligence system. Now, I mentioned earlier, Cheyenne Mountain had a number of centres within the organization, our Operations Centre. It actually had five ... when it started, you had the Intelligence Centre – very, very important because it was getting data from worldwide sources, fusing them, and telling ahead of time what was likely to happen. I have got to admit, only once – not even – I can't even call that a surprise. I was surprised by the consequences of some of these events, more so than the events themselves. I was never surprised by something I didn't know was going to occur.

INTERVIEWER: So, you had a pretty good feel that country X was going to be launching a missile at such and such a time.

CUPPENS: Protocols dealt with it. And, for the most part, people were alert and waiting for it to happen. That doesn't mean the unexpected couldn't occur, but it seldom did.

INTERVIEWER: So, with all this data fed into the ops centres in Cheyenne Mountain, probably. So, what happened then? Did this data get all sent out to various people or did you have to physically describe each event to them individually, or how did that go?

CUPPENS: Not everyone had the ability to collate all the intelligence that we did. You also have to remember that at this time, the US and Canadian militaries are downsizing. So, not all intelligence was analyzed. I say that because that's what happened in 9/11. The data was there, it just hadn't been analyzed.

So, we would get a briefing on every shift change. Every eight hours, there would be intelligence updates. And, of course, once in a while, you get a worldwide refresher again as to what has happened since the last time you had one of those. Primarily, every day, you'd have an update every eight hours. I would get those, if I wasn't in the Mountain ... just by virtue of them calling on my secure device. So, that's the intelligence watch. That's one centre of the Mountain. And they are feeding the information to the operations centre.

Then, you have the weather sensor because you have got to understand what your sensors can and cannot see. You could have solar phenomena. You could have sun flares. You could have overcast sky where you might not see the infra-red cameras or the radars or visual. So, you had to know what the world wide weather phenomena were at the weather centre.

And then, you had the Air Defence Centre. These are the people that watched the fires around the world and collated radar pictures from all the radars, air defence radars.

You had the Space Centre. These are the folks that are taking track of everything that is moving in space, keeping the catalogue up to date. And watching what else was happening because you can actually, you are not allowed to, but you can ruin somebody else's picture by jamming or interfering with another satellite, or banging into it. So you had people watching that.

Then, you had a Missile Centre. These are the guys that are watching the global missile launch capability.

So, all these guys are feeding with their own, and they are all receiving from different sources, too.

Missile would filter out a whole bunch of air-breathing stuff from the intelligence brief. And, they would just keep theirs. Plus, they had the ability to talk to other missile warning radars like the one at Found Isle[?] or Clear, Alaska. Physically talk to them. When data came in, they would physically make sure the system was running correctly.

Similarly, space, the Space Centre would talk to – they had Air Force Space Command, Army Space Command and Navy Space Command and The Canadian Space Agency and NASA, so they would talk to them. Again, in verifying data as it comes in.

So, I'll go back to the missile event now. An infra-red camera, one of the DSP satellites, picks up an accelerating heat source from the Earth. Bingo! After it sees it for so many seconds – and the camera is spinning at a certain set rate of revolutions. Again, that data is classified. But, you are able with a number of repeat hits, sending this data from the satellite to a computer.

The baud rate of sending that data was quite slow because it was encrypted. Then, it was sent over lines that were encrypted. So again, it was very, very slow. I'm talking about a baud rate that I'd be embarrassed to give you the number. So, it's taking time. Not like a week, a day, an hour. We are talking about seconds in time. It gives the latitude and longitude and heat intensity of this particular emanating missile, if that is what it is. It's fed in through a processing system, a computer that has a whole bunch of algorithms programmed into it. The computer knows from historical references that it has been given what this heat source is likely to be.

There is a distinction between an SS18 and an SS25 or a submarine type missile except — it has all the historical data of missiles that have been fired, in there. The computer looks at it and remembers the Defence Support Program satellite. It may just be one that's seen this information as it's launching until burnout. Launch to burnout isn't very long in these satellites, minutes.

So, and it's looking down through a soda straw. So, most of these missiles were being launched almost vertically. So, what's the azimuth? Where's it going? And right away, the computer will generate. It always defaults to the worst scenario. So, the computer defaults to every missile launch that it can't determine an accurate azimuth as a threat to North America, and gives a projection of the worst scenario. So ... in the processing system, it would generate this particular picture. And, the picture is picked up by the processors at every one of these centres around the world that is equipped with one.

The Command Centre had a number of them, all parallel screens. In other words, the Command Centre had something like 15 TV screens, in my time, four in front of every position. So, you could look at various types of projections, from your own processor, of the information that is coming in. You cannot change it, but you can look at it from different perspectives.

This same data is sent instantaneously to every Commander in Chief around the world and to National Defence Operations Centre. The picture shows up. Boom! There's a threat to North America, or a threat to somewhere else, emanating from this place. That's all they see is the projection. If you are trained, you know what that projection means.

You can, as I said to you earlier, you can develop other ways to project this image, to show you in a different graphic pattern of what this is. But it always shows up as what it really is. In National Defence Operations Centre, the geniuses from the communications world had taken this data and had developed their own pictorial display, quite different from anything I was using. But, it was essentially taking the automatic data and projecting it in a certain way. So that's what happened right away, as soon as the fan shows that there is a potential or threat.

INTERVIEWER: The radar fan.

CUPPENS: The fan from the satellite through the processor to your computer display. As soon as that happens, these are people all seeing it, right away. In the case of the Command Centre, a strobe light would start to flash. And there would be an automatic klaxon telling you that this was an event, that it was starting up. And that was a trigger for the communicators, as well, to call up the conference – the conference being anybody who has got one of these screens in his office, home or whatever, and call up all those players, plus call up the Command Watch.

And so, now you are in the Command Centre. The data is on your screen. The klaxon goes off and the strobe starts flashing. And you pick up a hand set just laying beside the telephone. And everybody picks it up. And right away, there's a regime of check-in

process just like calling a play in a football match. You pick up the phone. You hear, "Missile Event, Missile Initiating." So, you know the Missile Warning Centre is the one that has started the alert. And this is internal in the Mountain only. So, you're – and all the other centres check-in: intelligence, weather, FEEMA is on this call, FAA is on the call. And they are all talking on this phone.

And the guy who's at the Missile Warning Centre, his job is to try to tell the quarterback of the team, the Command Director, who is a brigadier or a colonel, what this event is, according to him. And so, he's describing this was a routine missile launch as was projected by this, in accordance with this treaty. And, it's coming from this place. And, it's likely to impact there. The picture being displayed is incorrect. I'm waiting on a confirmation by radar.

We always, before we went into any type of alert from warning, we had to have what they call dual phenomenology. You had to have two independent systems telling you that this is what it is. Seldom did you not have that. There were occasions when you would get it and you would have to really stretch the elastic. But what, in essence, you would be seeing was a missile launch with probable information that this thing has taken off from somewhere and has headed somewhere.

Now, you just sit there and wait for the first radar to pick it up. If it was indeed an ICBM heading to North America, for example, some of these ... missile flights would be about 30 minutes. And, it would take somewhere up to 20 minutes before our radar would even pick it up. That's the Ballistic Missile Early Warning System, or the BMEWS, or the coastal radars. We had four of them, again, different types of radar. So, you were just sitting there with a lump in your throat waiting for this to happen, however, to make sure that what you have is reasonable data. It was up to Missile Warning Centre to challenge the system sending the data. So, right away you do a kind of activity check back to the processor to where the satellite where the data came down.

INTERVIEWER: This is just to make sure you're not getting some sort of false reading?

CUPPENS: Right. So you do that. Now, if it's data coming in from a radar, they would physically pick up the phone and talk to radar, "Tell me about your operation system", because you could have a heavy downpour of rain in an area causing a signal to get distorted. All sorts of things like that could happen. Infra-red could have lost a signature because of overcast conditions, whatever. So, you had to go through all that.

It was up to the Command Director to make sure that the data going out of Cheyenne Mountain was, in fact, accurate. And, we used to use – I am hard pressed to remember it, it was too long ago. There was a name we used, which we transmitted to everybody saying the data we sent out has been examined and was correct, for data. Sometimes you have to say it was 'anomalous', meaning, "We don't know how the data got out. We don't think it's right." And so, we actually type in the Command Director's screen and transmit that to all the other screens, 'anomalous'. So, your lump in the throat would go away, and you'd say, "Holy shit, it's not an attack today. It's nothing."

INTERVIEWER: So, the guy in the Pentagon and STRATCOM, and Atlantic Command, or in Ottawa, he would know that this was questionable data that he was getting.

CUPPENS: Correct.

INTERVIEWER: OK.

CUPPENS: The conference call for most routine stuff, would call up all those situation rooms, ops centres. And, it was up to the Command Director to give this briefing, if it wasn't anomalous. So, if it was deemed to be a threat, if the computer projected a threat to North America, the conference would always run and everybody would be briefed by either the Command Director or – now, the Command Director could never make an assessment. That's the last step. Someone has to determine, the last human in the link, that this is or is not a threat to North America. And, that assessment was the prerogative of the Commander in Chief NORAD, or his Deputy.

So, you can imagine what was happening in my life when I was there for three years and the CinC was almost never there. So, you'd always be making the assessments. And the assessments were backed-up by another Assessor. So, in my time as a two-star, I was backing-up the three-star. And, what happened in this Command Centre, from the time the data is sent down to the processing station and it's pushed out, you have two minutes and fifteen seconds to make that assessment.

INTERVIEWER: So, this is where we heard the reference in previous interviews to quote, "NORAD, no".

CUPPENS: Correct. And, what the assessment was based on is this Command Director – the radio man would hit the button, and the phones in both the CinC's house, if it was night-time, or his car. They know where you are. They knew because you had to tell them. "I'm mobile." So, they knew you were on your secure radio in your car, or you're at home, or you've gone to the golf course and you'd be on your cell phone. Whatever, I've gone to the shopping centre, I've gone to the bank. But they knew and they would just hit the buttons because the system was programmed and whoever picked up first would start the assessment process. It didn't really matter on rank. So, if both the CinC and I were at home and the phones rang at the same time, whoever picked it up first, the Command Director would start because the clock is ticking – two minutes, fifteen seconds.

This time, 2:15, is based on the ability of a retaliation system to react. You have to have so much time. And so you pushed the envelope as tight as you can. And, of course, the final accuracy is this assessment. It triggers a whole bunch of other events. So, as I said, it was a circumstance for each of the Assessors. The consequences of error were immense.

INTERVIEWER: As soon as the Assessor had given 'No', or concurred in a NORAD 'No', that might probably have been recommended, the event would more or less stop?

CUPPENS: No.

INTERVIEWER: I mean, it would still be tracked, but no more notification would go out.

CUPPENS: No. It still would continue. The event never ended until this object impacted or vanished when you would close down the loop because some of these launches were just training shots. And the intelligence gatherers in the world would be interested in it.

Some of the events were space launches in which secondary flights would occur. Today, when you send an object in space, it just doesn't go and find its place in orbit. It goes to a transit orbit and then it's fired again and goes to another orbit level until it achieves the place it wants.

You got the Space Shuttle up there, the International Space Station. In my time, the Russian Station MIR was up there, manned. So, you have all those concerns. Various events take various bits and pieces of time.

The assessment is only yours to make about NORAD, about North America. There are other Assessors out there who might wish to tell their President that the war with North Korea was about to happen.

INTERVIEWER: Oh, I see. So, these would be other CinCs or other Command Centres that would...

CUPPENS: Make the assessments.

INTERVIEWER: Use the NORAD assessment as part of their assessment.

CUPPENS: Right. In other words, I may see a shot, which I did one time from China going out to the Chinese Sea. And, I might rate that as a – right away I can see it's not a threat to North America – CinC NORAD assessment 'No'. You'd type that in but you'd be listening to that conference call. You initiated, you saw it, you provided aerospace warning. CinC PAC would be saying a different story. He'd be calling up a different conference, which was none of our business. But, he would be using the same screen data and our continuing briefing as to what is happening to this thing. And he may be picking it up with his own sensors too. They are close-in sensors.

INTERVIEWER: And he would be worried about his own resources plus, of course, his geopolitical responsibility in that theatre.

CUPPENS: And, what would be a reaction for the US military? In every case, it was always: "What would be a US reaction?" Canada just never had anything to react with. In fact, most of the time, it didn't even understand what was happening. In a second, I'll come back to that, if you want me to.

There was a – if it was a threat to North America, even though the graphics would show that – it never was in my time – a missile I'm talking about. Not space, a missile event, you would end up making the assessment 'No'. But, if you had a 'Yes' assessment, the same processes followed. You want to make sure that all the sensors are reading it correctly.

You asked about the special sensors. There is special intelligence that I had access to that nobody on my staff had. You also checked all that, and making the assessment in two minutes fifteen seconds. If it was a 'Yes' assessment, you would then swing into another mode which was called SIOP, the Single Integrated Operations Plan, in which you would offer strike opportunities, retaliation opportunities for STRATCOM. And again, the conferees are high rollers, Vice Presidents, Presidents, Sec. Defs., Chairman, etc.. That same conference would have been initiated by CinC NORAD. It gets to SIOP, and Canada's not in.

INTERVIEWER: Because we have no retaliatory…?

CUPPENS: And, because many of our people have never been cleared by the US into this Single Integrated Operations Plan. You would find out how much – you asked me earlier about security. That's about as far as I can push in this. I had been read-in sufficiently to understand and there are people on my staff in the Mountain who can assist this on the secured phone. Unfortunately, Canada had not signed into the secure phone and so...

INTERVIEWER: Let's go back to that point that you raised a moment ago about Canada sometimes, or Canadian operations people sometimes, didn't understand what was going on.

CUPPENS: Yeah. It had been offered to Canada many times that this same data link system could be provided to whoever and wherever they wanted it. It just comes into Ottawa through a feed and it could be disseminated. I don't think they really appreciated the type of information that was coming in. They did on my watch, when I was finished, but at the time they did not. This information would have been of extreme value to deployed commanders. Bosnia ...

INTERVIEWER: It was used in the Gulf War, of course.

CUPPENS: Of course ...

INTERVIEWER: Scud launchers, that sort of stuff.

CUPPENS: Of course, we were providing it directly to those theatre commanders all the time. A scud launch, we picked it up. Remember, a scud launch was about eight minutes. And so, by the time you get your two minutes, fifteen seconds, because the processor takes some time, but usually about 45 seconds before you see this thing. So, you are really not dealing with a lot of time. And you know then, all you could get was from the type of sensor being employed. And, the short distance without a radar, no radar contact. So, you are just doing it off a missile warning, DSP. You get, sometimes the troops would get, two to three minutes of warning. And it would be ... the circular probable error of the scud was some 60 km. So, here's the target. You know, anywhere from here to here, please put on your gas suit.

INTERVIEWER: But, you're saying that Canada didn't, or couldn't, participate?

CUPPENS: I don't think they understood enough to say, "I want more data".

INTERVIEWER: Why do you think that that was? Because they didn't have people trained or was it a monetary problem, fiscal problem?

CUPPENS: It was an orientation problem, nine to five. The people that were working the Operations Centre of the day used our Operations Centre as a information fusion area to deal with ongoing events around the world. Not as a systematic fix it, fix it, fix it, the Prime Minister needs to know that, so and so needs to know that, because defence had been sidelined to some extent. Our biggest mission was downsizing. They didn't understand the degree and the data that was being made available. From the drug side, they certainly did.

Again, some of our data was being relayed to the Americans down at Norfolk, who have subordinate commanders on the east coast. We were shooting the data to PACOM. PACOM has a NATO component on the west coast. Our navies were getting this data quite regularly. Our army and air force weren't. Winnipeg was getting it and North Bay was getting it. And then, when we fused North Bay to Winnipeg and made it the Canadian NORAD region, Air Force Commander started having greater perspective of what was happening. Before, it was only in the eyes of the two-star that was working North Bay. That was the evolution when I was leaving.

I'll give you another illustrative story. We changed the graphics, the graphic display system over my time. [It was] very expensive, but we did it and it was a much more user-friendly system. It required new interface devices, new computation system. All that was shipped to NDOC. We used to run, routinely, missile training exercises for the system, and everybody would play including the conferees. And they would see the training. The training tape would be loaded on the main processor. And this was, really, an interesting facet of this high tech war room. It would be loaded and triggered and let go. We don't have a back-up. There's no shadow system running. The main system is always running.

What would happen is, if there is a real world event, the real world event would just bleed through and everybody would drop the training exercise. But, eventually, you'd have to take that training exercise out. And so we ran a number of them. And, I thought I'll just go up and see how well – remember, Canada doesn't have a red switch, big drawback. But we did have a secure line into an interface device. Oh, and by the way, the US Embassy in Ottawa has a red switch. So, it wasn't rocket science to fix this.

So, I decided I'd go up and take my Missile Warning Commander with me, a Canadian. And I said, "We'll go up and have a look and see how they are going to play in this missile exercise." At this time, I'm a three-star. And, we went into the National Defence Operations Centre with the permission of the overseer. And there in the corner, in the crates, were what we shipped them. There was a big flower pot sitting on top. I was so provoked at this, I went upstairs to see the CDS of the day, and I said, "I want to take you down to the Ops. Centre and show you something". He couldn't believe it, that that had happened. And that was indicative of the amount of interest there was in this particular type of activity.

It was also at this time that the US were introducing, and we were trying to introduce in Canada, a Joint Command and Control System. The US already had it in place, and they were willing to feed it to NORAD because NORAD's binational. And, again, you had some difficulties because there was US only intelligence riding on this thing. When I say US-only intelligence, for the most part it was subsurface blue; navy, highly sensitive, and, sometimes some human intelligence. They had an ability of sending around, on their systems, and we in NORAD couldn't get it other than by grabbing your friendly American and saying, "What have you got in that little machine over there in the corner?". So we were busy building this NORAD command.

At the same time, Canada is building its own Joint Command and Control System. And so, I'll tell you how effective it was for me. I had ... my US system sitting on my desk, on my computer, a separate computer from my hand cranking one. We used to have conferencing calls, like the Hollywood Squares. Shali would organize it. He'd call up and he would want to talk to – press a button. And, he would want to talk to all of his Commanders. He could press a button and the rules were, eight seconds. The Commander of the Command had to be on the phone. Eight seconds, but he would have Friday morning routine conferences in which the Hollywood Squares would come up. On my machine, there was a little camera, or I would go down to the Ops Centre. Most of the time, I went down to the Ops Centre because it was a much more friendly environment, and I could get staff with me. But, I could see the conference going on, on the screen, and whoever was talking was the biggest one. He could show slides, maps, printed documentation, whatever to each other. So, they really had a ...

INTERVIEWER: This is all secure, of course.

CUPPENS: All secure. Top secret. Canada was still involved in this. When I left the Air Force Headquarters in Winnipeg, we had this in our conference centre. We could call

all of our air force operations commands, 10 TAG, etc. and do that, but nationally, we hadn't done it yet.

So then, now we go into the common operating picture that I referred to earlier, this tactical exploitation of national capability. We were able to fuse data. In fact, in one event, and I'll come back to that, it was a shoot down of some light aircraft in the Gulf of Mexico, where we had to do a rescue operation afterward. And, I was able to see on my computer, the operating picture. I could see the image being projected by the destroyer. I could see the image being projected by the tethered balloon, the aerostat. And, down in number 22, I guess it was, I could see the picture being generated by the AWACS. All this same area fused. And I could talk on my secure phone, to any one of my commanders, and tell him to turn his screen on channel X. And you would have the same picture. And I could brief you on it. So, I said to the CDS of the day, "You know, you ought to get one of those". He said, "You have that available?" I said, "Ya, it's available now, has been for the last five, six years."

INTERVIEWER: Thought it was just in the movies, did he?

CUPPENS: Ya, ya. And, I said, "You could have it on your desk. That way when Hugh Shelton, Shalikashvili's successor, calls you up and wants to talk to you about a certain event of interest in Bosnia, you will have it, right in front of you". "Who's got that?" I said, "In any centre, your Ops Centre, but it's not been hooked up yet." So, he really got a picture then. He then asked if I would come back at a certain time and give him a briefing, as I have just done you, on missile warning. He was quite captured by it. We never got the briefing accomplished.

I came back once. I was scheduled for 11:00 a.m. He was late coming out of one meeting. He got in about 12:20 p.m, headed to the officers' mess because all the general officers' monthly luncheon was taking place. I'm looking at him saying, "What am I? Chopped beef, I'm not invited?" He'd forgotten about me. He came back at 1:30 p.m., no time. So, I said, "Fine". I had a flight to catch. And, Jack went back.

As I said, it was an orientation issue, more so than it was a not want to. It was just the orientation towards things space weren't there.

INTERVIEWER: Now, because NORAD was a binational command, was this same feeling, this same lack of interest, evident to you at the political level?

CUPPENS: Ya. A tough question, a tough answer. The yes and no of it, is no. I don't think, there was, in our Foreign Affairs entity, there wasn't significant interest in what NORAD was doing, or what the future held.

To illustrate why I have that belief, you have the twice yearly meeting of the stem from the Ogdensburg Agreement.

INTERVIEWER: Oh, the Permanent Joint Board on Defence.

CUPPENS: PJBD. Canada's Chair of that was an Ambassador who had been in the position probably more than a decade. And his American counterpart had rotated in and out of there about every four years. What was the impact of that Ambassador? I don't think anybody ever read anything he reported. I actually came to Canada to brief the PJBD when he sat in Kingston. Just describe the system to them. Many of them on the Canadian side were quite taken by it because it led to the discussion about Ballistic Missile Defence which was very topical then, and still is. So, I don't think there was that much interest. I think our interests, at that time were unscrambling the mess in Bosnia. Perhaps, again, participating in the G8, making sure that the money being harvested by all the government departments was realized, the national debt was drawn down. This was not a hot item for the government of the day.

INTERVIEWER: So, other than the PJBD, you were never asked to testify at any ... Parliamentary Committees?

CUPPENS: No, none. I did testify to a number of the US Congressional Committees instead of the CinC, because he wasn't available.

INTERVIEWER: Did you have an opportunity to get the ear of many visiting legislators?

CUPPENS: Oh, ya. Just on that end, there would be in the visit section, on my watch, we would have three major visits which would be four-star level or ambassadorial level per week. Three and that included formal entertainment, tours, and what not.

Now, Cheyenne Mountain, their log will show, where I was saying three a week, they would have something like 50 in a week of different types of visits. Walking through, looking at the massive mining operation that led to the creation of this place, or getting a display on computers or learning about space. So, it varied, but we had, I think on my watch, we had a PJBD-driven event come down. I had a group from Northern Region Headquarters come down. A whole bunch of people from the area around Yellowknife and the Northwest Territories government, they came. I had.

INTERVIEWER: So, I guess you had everything from, sort of, elected representatives down to boy scouts, did you?

CUPPENS: Yep. And, unfortunately, we had no political visitors to Colorado Springs. Sorry, save the Minister of Defence. During my watch, I had three of them. During my watch, I had three Chiefs of Defence staff. And I was there three years.

Our air-breathing warning scenario, in essence, works the same way. The same centres in Cheyenne Mountain are operating. Remember I described earlier the different sensors that we employ for the air-breathing threat. So, two useful things to know is; one ... TWA Flight 800 that left a lot of controversy about whether it was shot down by some friendly stuff. We actually saw that flight explode in flight with our space-based sensors.

And then, actually, we could play it back on our radars because it was going out of North America. And we saw it. We were able to do all the radar reduction and determine where this thing crashed, at what time. Similarly, airplanes, fighters that have gone, hit the ground, we have seen the explosions with space-based sensors and air-breathing sensors. But, the air-breathing sensors do see stuff.

I didn't mention earlier, but it is part of the array, especially in Florida. There are tethered aerostat balloons. Tethered at about 18,000 feet with a radar on board that are looking southward in the Gulf of Mexico primarily for drugs and for illegal immigration because they once had a Coot – a soft skinned airplane. It holds about 20, like an Otter – fly from Cuba and land in Florida without anybody ever seeing it, and the refugees got off.

So, but they had these problems with the Cuban migrants. And so, the radar system was watching in case they go down. There's the thorn in the side of the US government. It is a beneficial organization called Brothers for the Rescue of Hermanos al Rescate, flying Cessna, push or pull type airplanes. And their mission in life was really to watch the refugees from Cuba, throw them life rafts, throw them water, whatever they can, to make their journeys to US shores a little safer.

These guys also take it upon themselves as expat Cubans to harass the Cuban authorities to get rid of Castro. They had been known to make flights into Cuban air space in downtown Havana, even dropping leaflets. And they had been warned repeatedly by the Cuban authorities, by NORAD, by FAA – primarily FAA – not to do that. And on one of my watches, again, we were watching this group take off. And as you are watching them take off, the radar shows them heading down to 22 degrees north, which is the international boundary. They get their warning. You hear it from the FAA. They crossed. They went down into Cuban air space, 12 miles offshore, kept going, three of them led by their leader Hose Bisoto.

And, as they crossed the Cuban land mass, we could hear, and we could notice that Cubans were flashing up two Mig aircraft. And they did, they sent them airborne. When that happened, of course, when they were starting to get intelligence information that this was going to happen, we cued the interceptor squadron that was responsive in that area which was based also in Florida and asked them to go to high alert. And so, they went to high alert, even went to runway alert. But, by this time, the Migs are up, and it is not a very long flight from the base they took off from to get after these guys.

They started. The information was relayed by Cubans that they were going to be chased by aircraft. And actually, probably they saw it. We are not sure. But they turned around. The leader turned around and started heading back north. Two and three turned around and followed. They were just about over the land mass. Leader was already outside of Cuban airspace. He was about 13 miles. The other two were at eight and six, respectively. And the Migs shot both of them down. We heard the shot. We saw the missile on the machine. And our fighters were up. The trouble is, the fighters could never get there in time. It's too far away.

And so, there was a long investigation afterwards. We had a radar reduction to physically present evidence to the US State Department and to ICAO in Montreal that these people had been actually trapped and deliberately shot and killed. We presented that and, of course, ICAO found Mr. Castro's administration guilty and they put their various laws in act.

Our problem with NORAD was afterwards making sure that we could go and find these people. What if they survived? So we actually had to go through the diplomatic mess of getting a destroyer into the area, a coast guard cutter into the area, aircraft into the area with surveillance device, but there was no survivors. That's one illustrative of that type of activity of the air-breathing.

The other is the Alaska region. We watch as they sometimes fly aircraft. And, the Bear era was gone in my watch. It has returned, I understand, recently. Just, I don't know why, but there would be occasions when they would want to send a flight plan aircraft from Russia into Alaska and beyond that. They were selling their stuff, basically. And, we even had a 'MOW link', Moscow-Washington. We had that at Command Centre. You could pick up and talk to the guy in Alaska who could talk to the guy on the other side and find out what their intentions were. So, that's the air-breathing side.

INTERVIEWER: Interview with Lieutenant General Cuppens on 14 November, 2006. Tape 1, Side 2. Tape ends.

END OF TAPE ONE

INTERVIEWER: Canadian War Museum Oral History Program Interview with Lieutenant General Cuppens. Tape 2, Side 1.

INTERVIEWER: General, tell me about a few of the other instances where you may have been involved with either missile or air-breathing events.

CUPPENS: The next three will illustrate the usefulness of the system. First of all, at one stage, I should point out, the Russians and the Americans go to great pains to make sure that they advise one another of impending missile or space shot. And there is a regime and a protocol to be followed. As a result of that, of course, your intelligence community then knows what is going to happen so you don't misinterpret it. But you still watch it in case they don't do what they say they are going to do.

On one of these events, the Russians were going to launch a satellite into space which was going to have a plutonium battery on it. And you may remember the Northwest Territories event. This is the same thing. And the Americans were quite upset about it. Canada was also upset about it. There was a lot of diplomatic pressure to brought bear on the Russians but the notification still came in. And, lo and behold, they launched it. And, of course, it became a space-event. That thing went up and into its first level of transit orbit, and it failed to achieve orbit. It started to tumble in space.

Now, space sensors, we didn't talk about. They don't belong to NORAD. We just get data from them. But they have the ability to see where things are with radar. They also have the ability to project where things were by a counter, like an internet site counter. There is a fence right across North America that anything that goes by – today you've got 5,000, tomorrow you've got 4,999, there's one missing. It works that way. Anyhow, then they have the audio interception devices.

So, the space sensors – well, you are still working with heat. And so, we saw this thing, first of all, starting to not achieve the orbit that they said it would. And, as it went around, it started to not stay in the right place. It ... seemed to be diminishing in altitude. We put a – we didn't have, at that time, any camera on it. We just had a radar picture. And so, it's tumbling in space. And, they call up a space conference. Everybody is on board including, this time, the Vice President because the computation system that looked at this said, "Oops, this thing is going to re-enter the atmosphere. And, it's going to re-enter the atmosphere over Australia." Remember those key words, 're-enter the atmosphere'. The thing this processing system cannot tell you is where this thing is going to strike the Earth because the whole era of space is irregular. And we don't know what this object looks like. Did one solar panel come out, did two? We hadn't had a picture of it yet from a surveillance device. So, it predicts its impact over Australia. And guess where Clinton is. He is in Australia. That's why Gore got very interested in this event. And I had a quite a long conversation with him. He was quite disappointed when I told him that we could not precisely tell him where it was going to land, just Australia.

The thing went around the Earth. And, I gave him predicted impact point about 45 minutes later. This was during the evening, about 2:00 a.m. About 45 minutes later, the ... space-based sensor picked up a hot spot over Chile. And the thing impacted the ... atmosphere near Chile. And so, that was the end of the event. And, of course, again Mr. Gore was really upset because ...

INTERVIEWER: Now, this is Al Gore, the Vice President.

CUPPENS: The Vice President of the US.

INTERVIEWER: He could not understand why, with all the money they were spending on Defence Department that we could be so inaccurate as to one time predict Australia and the next time predict Chile. And, General Shalikashvili, he got on the blower and he, he's the Chairman of Joint Chiefs, he said, "I'll explain this to Mr. Gore." In essence, Mr. Gore didn't understand the flat rock over a curved surface skipping. And that's what exactly happened to the satellite. It hit the atmosphere and bounced. Bounced three times and finally impacted over Chile. In fact, about a month later, one of the again peasant farmers found a piece of this satellite, told us about it. What happened with the plutonium? Nobody knows. It must have burned up on re-entry. That's what we surmised.

Back to space-based events again. Black Brant rockets that we make in Canada with Bristol Aerospace, a number had been sold to Norway as weather sounding rockets. They were experimenting off the islands off Norway, Spitsbergen. They were doing some weather tests. They actually wrote diplomatic notes to all the embassies that were situated in Oslo, including the Russian Embassy, and said that they were going to do these tests from this period to this period. And the tests came, just as advertised.

But we noted on the intelligence side that the Russians were starting to alert forces. And they were bringing forces up to a higher degree of readiness. More readiness and more readiness as more of these rockets were fired and we couldn't figure out what was going on. Pennymire[?] was very much concerned. And, this stage at NORAD, all we are doing is telling them that a rocket went and what was happening to it. But we're being kept in the picture by the others who were feeding us back. And, what was happening was, the Russians were mobilizing their force. Yeltsin physically had to take a control device and turn everybody off.

Their system is a reverse of the Russian. Our system looks at space-based infra-red looking at the Earth. Their system looks at the cold space. And so, when they saw these rockets, they assumed them to be an attack. And it was interesting that this same system that NORAD uses, is used by the Russians. And the control device that they had the ability to demobilize the forces that quickly was again, an illustrative thing because we shared the information with Russians. The US did. The US told them, "Hey, this is not, this is this." And then, they went back in their system and found out that the embassy in Oslo forgot to send this thing forward. So, that was another event.

The last one, another one you should know is, routinely when shots are fired into space – that can be a missile or a ... space launch – the Space Centre in Colorado Springs, which at that time was working for NORAD, would put a box around anything that's manned in space. The diameter I think was ... 10 miles by 20 miles I think was roughly this box that we put around anything that has got a human being on it. And you will do space predictive orbitology. So that, every 48 hours ahead of today, you will look at where this thing is and where anything else that has been up there is that could present a threat. And you would advise NASA that the Space Station is at risk of this object, either a decaying orbit or one that's elliptical, or whatever. And it would cause alerts to take place.

Also, the Space Centre will tell NASA of anything in the funnel if you are launching something, if you ask. And so, to my knowledge, when I was down there in three years, they ... caused the Shuttle to move twice with information we provided. There was enough of a risk, they decided to move. And you've seen what damage can happen to the Shuttle with just small flecks of paint. So, we did the same for the MIR Space Station. We do the same for the International Space Station out of concern. And, strange enough though, Canada, when it launches stuff, from French Guyana, they never ask for any clearance. They just fire. And you take your chances.

Last but not least. And this goes back to an event I mentioned earlier in the tape. There was an election coming up in Taiwan. And, China was very concerned that Taiwan

might not see things the way they saw one of their falling away provinces. And they wanted to make an impression. This is in hindsight. They wanted to make an impression on the Taiwanese that they could reach out and touched anytime they wanted. And so, we got a notification one day that there was a pending missile firing from China. And it gave the lat and long of their launch point, four shots, and the timings, and the location where the impact was going to be. And, they said to the world, this is going to take place at this time. And, here is Taiwan. And they put out a notice to mariners that these two areas here would be closed to fishing and aircraft for this time. And so, they fired all four, and I think they were two minutes apart. They put one here, put one here, put one here, and put one there. So, that's Taiwan.

INTERVIEWER: You have just drawn boxes on the, presumably east and west of Taiwan.

CUPPENS: Yep.

INTERVIEWER: And, they popped two missiles in each box.

CUPPENS: Yep. Predicted right to the second. Now, what was happening – I had mentioned to you earlier that if you have a real world event and you're doing a training drill. I was checking out a colonel at the Command Centre with a training tape plugged in; and, we're doing this. And he was looking at these training events that are coming up and, all of a sudden, that happened. I knew it was going to happen and I expected, but it didn't upset me. And I was looking over his shoulder. And he was looking at this screen that had all the graphics of his training event and this big yellow stuff, fatter than any image he had, had flopped down on his screen. And he looked and studied and tried to make it go away. He tried to make it go away. He didn't know what it was. And I had to step in real quick and make the assessment. And, in that case, we could make the assessment.

INTERVIEWER: So, that's an interesting point then. When you are doing a training tape, exercise, something real happened that was differentiated through the graphics. You knew that this was not part of the tape.

CUPPENS: Just by its colour. It's programmed. And that's what I mentioned earlier because you're – they used to ask us, "How come you can't shut the system off, reload your new software and flick it back on?" I said, "It's like changing an engine on an aircraft in flight. You can't do it." So, what we do, we physically work through all this. Go to great pains because we cannot make a mistake with the system. You can't, you know, you can imagine what the consequences would be if you misinterpreted any event that was going on. And people took heed of it. And the consequences were bad. So, you take great pains to put training exercises in when nothing else is going on. But in his case, we needed him on that job. And I couldn't certify him until he could physically show me he knew how to do – this was a great learning experience and I am sure he will never forget it.

The other event that I should tell you about was, I mentioned earlier that I checked out each of the CinCs that came after Horner. And I had two of them. I had a guy named General Ashy and another one by name of Hal Austis[?] who had been the G3 at the Pentagon.

General Ashy was a hard of hearing guy. He came in, fighter pilot, he had been involved in Bosnia, got promoted, flew into Colorado. Got himself involved in quite a bit of controversy dealing with accusations of misuse government aircraft, promotions, and all this stuff to the point that it made Newsweek magazine, Time magazine. And he made a rather derogatory comment about O'Blenis, who was my predecessor, about trust, being able to trust Canadians, etc. He claims it was a misquote, but it's hard to know. In any event, he ... arrived non-stop from Italy. Dropped off at his house 7:00 p.m. He had to go back to Washington, that's what he told me. He had to go back at 6:00 a.m. I said, "General, when do you want to do your NORAD stuff?" He said, "Well, we'll do it at 4:00 a.m". So, he came out to the Mountain. I met him there, 4:00 a.m., and I went through a training tape with him. He had no trouble with it at all. I said to him, "Now, you know, this is the Command Director, we call him the CD, and he'll be asking you for assessments. So, if you're ready, you can go on to the job of Assessor."

Bud Craft, a navy captain, is on the ship his first night the guy comes back from Washington. He's just dead beat now. I say this by way of humour because I had mentioned earlier that both Assessors are called at the same time. And so, the phone rang. I'm on, he's on. They start briefing him of this event, missile event which was predicted. And, he actually picked up the phone, "Hello". And, Bud Craft had a heavy accent and he said, "This is CD here, sir." He said, "What city, what city?" And, of course, in the middle of the night, he's awakened from a dead sleep. And so, I said, "Listen, colonel, I'll look after this assessment." "OK", click.

And, it would happen every now and then, if your boss wasn't attuned to the events or you knew he wasn't. We trusted each other enough to say, "I'll look after it". And then, the other guy would back off because you can find yourself in a fog of sleep. And so, that's why we always had a back-up system.

That's all my notes. Done.

INTERVIEWER: You alluded earlier to Ballistic Missile Defence, BMD, and the Canadian disinterest, or the political difficulty, perhaps, is a better word. Can you say a few words about that?

CUPPENS: Sure, the Ballistic Missile Defence was for me a major issue. It was clear in my mind, the Americans wanted us in. They would have gone to any length to make sure that we were in. They needed this highly respected country's flag at their table because there are those in the world who believe that everything the Americans do is sinister and leads to other things. I looked hard and far, whether this was even possible. And it wasn't. And, it was clear they wanted Canada in.

And, they wanted NORAD to be doing it. It had tremendous potential for our country, notwithstanding the technology, that part of it, and all the contracts that had been let. NORAD would have been a very, very good centre to be doing this and, as I mentioned earlier, we could then have said our mission was also aerospace warning and aerospace defence in its fullness. But, that was not to be. We practised command and control of it many times, many exercises. We tried to get people of political influence down to play roles so they would understand the rules of engagement have to be preset. There is no time to be arguing over what you are going to be doing next because this thing is still moving at 17,000 kilometres or miles an hour. And, you know, I went to Ottawa myself and briefed the Defence Department, the Defence Management Committee. At that time, the Deputy Minister was a lady. She asked some very intelligent questions about what I had told her. I briefed Mr. Axworthy. Again, no one was in the mood to weaponize space.

INTERVIEWER: Did anybody give you the reason that...

CUPPENS: Ya, to me it was fallacious. They said, "We don't want to weaponize space, militarize space." I said, "Militarize space? There are 700 military satellites zipping around up there." And I said, "You know the analogy for me is the same as, one time we invented boats so we could go and fish. And then, someone said we could invent something to fight the other guy from his fishing ground. And, eventually we got a navy out there combating one another. And, this is historical." People said, "Look at this wonderful thing that flies called a balloon". And, if you look at other people, and holy smokes, and fighter airplanes are developed; now we have airplanes armed to the teeth.

I am convinced that not many years from now, there will be weapons in space. We have already done tests from the Earth to shoot things down in space. I was present when one of the systems that tested the current day satellite TV systems where you can now switch without having to move your antenna. You can see multiple channels. That was an experiment where the American Air Force actually launched a satellite, played with it, tried to jam it. And, eventually shut it down; fried it with a ... laser from Vandenberg.

So, you can shoot them down there. Both the US army, navy and air force were competing to field the system, or systems. There are already navy systems. There are some army systems. And, the US Air Force was experimenting with an airplane-based laser. But, to some extent, there will be a time when the nation's interest, whoever it is, determines they made such an investment in space that their economy depends on it. And they will take steps to protect. And to protect means you have to be able to do something about it. And, boom, you're into a war in space that Canada doesn't want to see. It's all right to say as a principle we don't like it.

As a military man, I felt compelled to present the government with workable options that, if this ever happens, here's an outcome. And, I think, sticking our heads in the sand the way we have done it is dumb. And I've said that publicly. I've written about it, commented about it. Mind you, we learn so much from the command and control simulation necessary to physically launch twenty or so missiles against an incoming five

that eventually you are going to have to launch many, many more against incoming many, many more missiles.

The recent event in North Korea sure tells people they weren't horsing around. They had learned second stage boost technology. They now have a nuclear weapon, they claim. And nobody's refuted it. Watching the Indians develop their nuclear capability. All of that and we are still standing by saying we better not have anybody develop a Ballistic Missile Defence system.

Mr. Axworthy, to his credit, used to say, "Well, we don't have to worry about it. The Americans and the Russians have an ABM Treaty."

What did Bush do in round one when he first took over? He cancelled the treaty. That way, he wasn't restricting the way the Americans could defend themselves. So, there's much merit in that – I know, looking at the future, someone is going to place a weapon in space; someone is going to experiment with one in space. And, the Americans are ready. They have all this stuff figured out. The [?] EMP, a satellite...

INTERVIEWER: So, it's really just a matter of whether Canada wants to play or not.

CUPPENS: And, Canada's position is, we don't want anybody to be playing. Great position to have. Morally, you're on the high ground. But, eventually you will be on the moral low ground when all this stuff lands.

INTERVIEWER: Interview with Lieutenant General Cuppens, on 14 November, 2006. Interview Ends.

TRANSCRIPT ENDS