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INTERVIEWEE: Lieutenant General (Ret'd) Ken Pennie

INTERVIEWER: Angus Brown

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Lieutenant General (Ret'd) Ken Pennie

Interviewed 9 November, 2006

By Angus Brown

INTERVIEWER: Canadian War Museum, Oral History Program. Interview with Lieutenant General (Ret'd) Ken Pennie. Recorded on 9 November, 2006 at Ottawa, Ontario. Interviewed by Angus Brown. Tape one, side one.

General, can you please state your name and spell your last name for me?

PENNIE: My name is Ken Pennie, P-E-N-N-I-E [spells last name].

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

PENNIE: We have.

INTERVIEWER: Can you give me a bit of background on yourself, sir?

PENNIE: I was born in Winnipeg, 1948. I joined the Royal Canadian Air Force in 1966. Spent four years going through the Military College system and then graduated with a degree in International Studies. Undertook pilot training. Went through the pilot training system. Earn my pilot wings and proceeded to fly a number of various tours in the Air Force and the CF as we integrated. It was a career that saw me fly mostly helicopters, mostly as support for the Navy and the Army and a good cross section of operational flying and staff duties that culminated in the point of interest for the interview, was went I was selected to Deputy Commander in Chief of NORAD. I took over that position in early August of 2001. I relinquished it in July of 2003.

INTERVIEWER: And so you are retired now?

PENNIE: I retired in 2005 after being Chief of the Air Staff. So I have been retired for about a year now.

INTERVIEWER: Sir, I wonder if you could describe the events leading up to your selection for that position as D CinC of NORAD?

PENNIE: I was in NDHQ, and I was there for four years. I did the position of, at the time was called Director General of Strategic Planning, working directly for the Vice doing a lot of the capital and strategic issues of defence – budget related issues and all those sorts of things. General Henault approached me one day and asked me if I'd consider the possibility of going to Colorado Springs. I said that I would consider it and I

heard nothing further until such time as about 30 days prior to going. I was called in and then told that I was going to be promoted and be sent down to Colorado Springs. Which was an interesting 30 days getting ourselves organized and shipped south. We managed to that and still get a bit of family holidays in the process.

I didn't have much background in NORAD. In fact, I never served in NORAD. So NORAD was kind of a strange position for me. It's not something I thought I would be a front contender for but, on the other hand, it was an opportunity that I was kind of pleased to accept. Once I got there, I think I was able to realize that my skills as a senior person that had developed over many years were reasonably able to prepare me to handle the challenge that lay ahead of me in NORAD.

NORAD itself – remember, this is 2001. This is about 12 years after the end of the cold war and NORAD was really focused on trying to deal with a potential wartime threat that would emanate from what was now Russia. The probability of that event was considered relatively low in both Ottawa and Washington, our two capitols that we reported to. Funding for NORAD had never been particularly strong. One of the things I noted when I got into the NORAD HQ position is, there was quite a long list of things that had been requested over the many years and a lot of good quality staff work had gone on, but there wasn't a lot of appetite in either Ottawa or Washington to actually do any of the things that we recommended that needed to be done.

INTERVIEWER: What sort of things might these be?

PENNIE: Just modernization. We live and take for granted that computers need to be replaced every once and a while today. At the time, we had computers that were designed in the '70s and put in place in the '80s that needed upgrading, but that was going to be expensive. The bill to do that was not something that anybody really wanted to bite off at that time. NORAD had become fairly low priority. In fact, some of the staff officers I had working for me had previously been in NORAD and had come back at a different rank level. And they had good experience, understand that, but they were referring to it as SNOREAD because it really wasn't that demanding on a day to day level.

INTERVIEWER: So it was pretty routine, then?

PENNIE: It was relatively routine. There was not a huge threat over our heads. We were not getting the funding that we needed to modernize. It was a fairly low-key place to work in my estimation. I had just come from NDHQ where there was a lot of pressure and a lot of frantic activity trying to transform the organization, trying to balance what were really tough budgets and trying to claw ourselves out of the downsizing that we went through in the '90s. It was a very difficult and stressful environment. Whereas NORAD was a lot less stressful, a lot less challenging in some respects. The challenge was trying to move the organization and transform it, as well as everything else, and trying to convince Washington in particular, but also Ottawa, that some transformation was, in fact, appropriate for that organization, NORAD, to make it relevant in today's day

and age, or in the day and age of 2001. That is what I was kind of learning as I entered into the experience. I had to learn how it all worked, how it all networked. Had to learn Space Command. Had to learn how Cheyenne Mountain worked and how the connections between NORAD and US Space Command, in fact, operated. It was a fairly smooth running operation at that point in time. There was some issues, a lot of issues my predecessor had to deal with respect to releasability, with respect to missile defence.

INTERVIEWER: I'm sorry, when you say releasability, you mean...?

PENNIE: The Americans tend to classify everything in a fairly categorized and close-hold way. They tend to, when it's classified, to leave it classified for long periods of time until there is some operational need to de-classify it. Bureaucratically, they don't tend to want to do that. As a result, as a Canadian working in the American system, in the NORAD system which is a bi-national, NORAD Canadians were always faced with the issue of what can be de-classified and what should be de-classified to allow us to operationally do our job, from the US side. Classification issues were a challenge. And what I had discovered – well, my predecessor had kind of flushed out here – was that over the years, a lot of things, because NORAD primarily a United States Air Force and a Canadian CF organization – not that we didn't have tri-service in the organization, we did. But really the will to make it work was on the part of the United States Air Force. But a lot of things have been done over the years that allowed Canadians access to certain things that worked operationally, but weren't clearly understood in Washington. So, as Washington started to understand how things were really operating in Colorado Springs in NORAD, they became a little bit more nervous about the whole releasability issue and we had to raise that more officially and then deal with it properly. It was something that General Macdonald had taken head on. It was one of the issues I was faced with right up front.

The Commander of NORAD during my whole tenure was one person, General Ed Eberhart, E-B-E-R-H-A-R-T [spells last name], United States Air Force four-star. A very principled and very good leader who really did understand that NORAD worked for both Ottawa and for Washington and really took that to heart and made the organization work. He would take up the issues that we would raise for him and he would take them into Washington and try to solve the case. He did a very good job of running NORAD and US Space Command as far as I could tell at the time. That was the situation as I kind of came into NORAD. That's what I was seeing in the first few weeks. Then, of course, the momentous event of 9/11 happened.

INTERVIEWER: We will get to that in a bit. I wonder if you could just tell me a little bit about your personal training or briefings during your handover, or when you arrived?

PENNIE: It was fairly well organized. We had several days where staffs would brief me. I spent some time with General Macdonald, understanding from his prospective what various files were. This is normal. One of the things that was important in that particular position is a good turn over and General Macdonald made sure I had that. I went through a series of briefings. The first three days I was there was pretty well non-

stop briefings by the various staffs to make sure I was aware of the pertinent issues of the day. I also had to do some training so I could effectively operate at Cheyenne Mountain as a combat director. I launched that, but didn't finish it until sometime later because it took a few months to go through that process. I thought I was reasonably well prepared when I took over the job. Most of the files seemed to be in reasonably good shape and the challenges were fairly clearly laid out. There was no huge surprise. The organization was in really good shape, other than what I had mentioned about finding it difficult to get the attention of Washington or Ottawa with respect to issues because the Cold War was over. In fact, a lot of people were saying that maybe NORAD had outlived its usefulness. That was the situation as I found it.

INTERVIEWER: When you arrived, can you encapsulate for me the mission of NORAD?

PENNIE: The mission of NORAD hasn't changed. It was fairly constant. I can still see the slides [laughs] but it was to conduct, on behalf of Canada and the United States, North America aerospace defence and aerospace control. Those were the two fundamental missions. They have been in place well before I got there and I think they are still in place today.

INTERVIEWER: Would it be fair to say that NORAD was outward looking at this point in time from the North American continent?

PENNIE: I did mention earlier that the computers were somewhat old and, in fact, post 9/11 we had some real challenges dealing with that particular issue. One of the impacts of the technology we had at the time was that you could only maintain visibility on a fixed number of tracks. That number would be in the small hundreds. Which was fine to deal with a bunch of Russian bombers attacking North America. That would have worked fine. NORAD in the 1950s and '60s had to worry about Russian bombers over flying North America to drop their bombs. By 2001 that was not the case.

The radar picture of NORAD was in fact focussed on the periphery. It was looking outward. When we did a high jacking exercise, it was primarily someone high jacking an airplane wanting to go somewhere, wanting political demands. That was the scenarios that was most frequent. Or someone coming in with a threat from abroad. Those were the scenarios that I saw on the exercise program when I arrived. The technology was not in place as it had been in the '50s to actually track bombers wherever they went in North America. In 2001 the threat picture was really – if there was going to be an attack, it would be a bomber launching cruise missiles. Those cruise missiles would be launched really along the periphery.

The radar chain, the North Warning System, this was built in the '90s and the other warning pieces that really formed a shield around North America. NORAD was really monitoring a shield around North America to identify any unknown or undesirable aircraft or activity that would be approaching that could potentially be a threat to North

America. That was really how we were working and that's how the technology was structured to support the mission.

INTERVIEWER: Was it felt that the main threat was, indeed, the air-breathing bomber launching a cruise missile, or was it more a ICBM or submarine-launched ballistic missile threat?

PENNIE: There were two aspects to aerospace warning and one was an unidentified aircraft approaching our air defence identification zones. The other was a missile launch. Clearly from about, I would say, the 1960s on, the missile launch was the more immediate and the more concerning threat because in all probability had there been a war, the bomber would have been probably the second wave. Clearly, NORAD over the years had gotten very heavily involved in missile warning.

The Americans at the time were working very hard on missile defence programs. The issue really, one of the big issues on my table when I took over, was how we dealt with the missile defence piece. I mentioned the releasability challenge. Well, that was directly related to missile defence because all the new upgrades, technological upgrades, that the Americans were prepared to fund were missile defence related, ie. new radars, new systems to control the missiles. And NORAD wasn't part of that and so that was presenting a real issue. Whereas Canadians were previously working in space related activities on technology that existed where we had full releasability, the new systems coming on board that had an application for missile defence, Canadians were being excluded from there. During the two years I was there, I think there was close to, certainly 12, but maybe close to 20 positions that we had to be readjusting. In other words, we had to take Canadians out of that particular job because their job had gone away on them because the classification was such that the Canadians couldn't work on them. It was more and more missile defence related. We were being more or less eased out of those areas that were missile defence related or had a bearing on missile defence.

This was significant in the context of, any time you put a satellite up, it can cost you a hundred million dollars plus to put a satellite together. When you launch it, it is even more than that. A constellation of satellites, your talking multi billion dollars US. Well, clearly, when the Americans put up a satellite they want it to be multi functional. They want to get as much bang for that buck as they can get. The fact that it had a portion of the mission that was related to missile defence unfortunately meant that the other missions that didn't necessarily relate to missile defence, we were also being kind of eased away from. Those were the releasability issues that I was facing throughout the two years that I was there. Missile defence was, in fact, pushing Canadians out of some activities where we had been involved in the past.

INTERVIEWER: And, of course, at this time Canada had decided politically not to participate in BMD, or Ballistic Missile Defence.

PENNIE: No, at the time there had been no formal Canadian decision one way or the other. The white paper in '94 had said that we would keep abreast of missile defence

developments and keep abreast of research so that we understood the program as it developed. On that hook, we enabled us to keep abreast of some of the experimentation and some of the work that was ongoing. That was fine in the '90s, but by the time I got there the Americans were moving closer and closer to trying to take that experimental developmental system and make it some what operational. I can't remember the exact dates, but that process was ongoing throughout my tenure and, in fact, it did turn operational, I think about the time I was leaving.

INTERVIEWER: Would it be fair to say that, during your time there, Canada would be viewed as being reluctant to participate fully?

PENNIE: Well, we certainly weren't participating fully, but missile defence file was a big file. I kept abreast of it. I had briefings from an American who's running the program. He kept me abreast of the developments on a monthly basis so that I could advise Ottawa what was going on. None of this was particularly highly classified. It was just more or less keeping abreast of the reality of the situation.

I think it was in the fall of 2002 that the Americans formally approached Canada, and this would have been from the BMD organization, to participate in some way, shape or form in the missile defence framework. They approached a dozen or more of their closest allies, mostly in NATO, but some in the Pacific. Canada was the first one they approached. They approached Canada first because Ottawa was closer and they kind of wanted to test this and see how it would work before throwing it out to other allies. Of course, there was the NORAD nexus that made this relatively important to Washington. In the fall of 2002, that approach was made and I don't think there was a formal answer until Prime Minister Martin – and I think it was the end of February of 2005 – who formally declared Canada wouldn't go any further with missile defence.

Now, in between there were a number of incremental steps that were made. One of them was pretty important. That was allowing Canadians in Cheyenne Mountain who would be sitting right next to a missile defence piece to actually be there when this was unfolding and to provide warning data to BMD. This was a short term asset to the US, but it wasn't a long term solution at all because what's going to happen over time is, and we can get into talking about the technology, but with respect to missile defence the warning pieces would be new. Those warning pieces would be US and they wouldn't be part of NORAD. NORAD in the past did actually have a piece of the whole piece in a big time way. This clearly will change with the applications of new systems. Now it takes several years to bring on these new systems. By Canada allowing NORAD to provide warning to missile defence, it bought a little time. It did not solve the problem.

INTERVIEWER: Can you elaborate a little bit on your reference to the technicalities?

PENNIE: Yes, I can. Presently, NORAD relies on a system of satellites to provide missile defence warning for both Canada and the United States. This is warning of an impending missile attack. US Space Command and NORAD at the time were monitoring all missile launches in the world. They do this with a constellation of satellites known as

the Defence Services Program. They're still current, they're still effective, even though they are somewhat old technologically. This system has been worked out over many years and Canadians are fully knowledgeable about how to make that warning piece work. NORAD, having a role in the missile warning, in fact has been ongoing for some years and it does make sense. The challenge as we move into the era of missile defence itself is that the new sensors, the new radars, the new warning radars, the upgraded BMEWS warning radars, will be – these are phased array radars that are in place to detect any incoming ballistic missile or warhead. These are in place to protect the United States, essentially, from attack and they also to protect Canada at the same time. As they're upgraded, they're going to be upgraded to have a capability to discriminate between various warheads and decoys and have a much greater capability for missile defence. That upgrading, giving these radars more applicability to missile defence, essentially means you're into some very touchy classified areas that Canadians, because the government hasn't signed up to missile defence, Canadians can't be fully a part of. In fact, in many cases they are being excluded.

In the past – certainly when I got to NORAD – Canadians were involved in all of the major radars. Having Canadians there, working as technicians and working with their American allies, there might be a small number of them, but they were still part of the team. In the future, that may not be the case. Those are positions that will have to be withdrawn because the US is going to operate this on a US-only basis because of the Canadian decision of missile defence.

The same thing applies to the satellites. When I mentioned the DSP constellation of satellites, again as the new constellation of satellites comes on board, I don't know what year this will ultimately be, this is being worked. It's called SIBIRS, Space Based Infrared System, and these new satellites will have even more discriminating power about the ability to determine what sort of missile and where it's launched and what its trajectory might be. They will be more capable than the DSP. They will also have that capability to the missile defence file. Again, because they are connected to missile defence, Canadians are not part of that part of the program. Being closely connected to that particular new technology is not something that Americans are keen to give us because we're not part of the missile defence. We haven't Canada been approved. That kind of excludes Canadians from two huge pieces.

It ultimately means that Canadians are technically are not going to be given access to warning. It means Ottawa won't get warning in the future. As long as NORAD has the old satellites up, NORAD can provide warning. Now, it becomes a bit of a joke if you are suggesting – and some people have suggested this today – that NORAD is providing warning to the missile defence system, which is what I mentioned earlier, does provide a short term fix. As the new radars come on board, as the new satellites come on board, that NORAD warning will be irrelevant. By the time NORAD provided its warning, a decision will have been made. By the time Ottawa knows something is happening, it will have already happened. The whole concept on which NORAD was based was to allow both capitals time to react. But in the missile defence world that time won't be there. A reaction in Washington would already have taken place on the technology provided for

missile defence. Missile warning, if it is still there because ultimately it will be down-tooled, for a period of time you will still have both, but then the new constellation will take over.

INTERVIEWER: With new satellites and new detection equipment, the warning and decision time will be considerably shortened. Is that correct?

PENNIE: The warning time will be more precise. It should happen a little bit faster. It needs to because the time required to provide missile defence decisions is very, very short. When you look at the technical parameters of, say, if you had a launch of a Intercontinental Ballistic Missile from a place in the far east that's not far from an ally called Japan. And if that missile is headed for a place like Vancouver and the interception is going to come from a place like Alaska, then if you look at the time and distance and relative velocities, you would realize you only have a few minutes to make a shoot decision. Therefore, you need warning that is very precise and very early and very quick.

Back in the Cold War when we collectively put together the missile warning piece, the parameters were different. You weren't trying to make a decision within minutes to intercept or not to intercept because you didn't have that capability. Only the Russians had the missile defence capability. Even that's limited to the Moscow area. What you were really trying to do in North America and NORAD was to provide sufficient warning to Ottawa and Washington and Washington was the one most concerned about this, to confirm a missile attack was in fact taking place. The missiles that were being tracked inbound would be tracked and confirmed. So there's a process in place where the actually technicians looking at the radar screens, which didn't sit right in the Cheyenne Mountain command Centre, you'd talk to them by phone and they would confirm what they are seeing. And their supervisor would then confirm what they are seeing, and it would be verified. So you have humans and human supervisors verifying that, yes, we are in fact seeing these x-number of missiles tracking them into North America and identifying where their targets are most likely to be. Also, you wouldn't confirm an attack was on going until, in fact, you had radar confirmation of the warheads coming.

INTERVIEWER: As opposed to just infrared satellite warning?

PENNIE: As opposed to just the infrared satellite information. We called that in NORAD 'dual phenomenology.' In other words, you had the radar picture backing up and supporting what the IR was saying. And as long as they correlated and said the same thing, you had pretty high confidence that an attack was under way. Then you could tell Washington that, "We're under attack." Washington could say, "Right, our options are," and then Washington would decide what it wanted to do. We are talking about nuclear retaliation in those days and what sign up option would be chosen. All that is very classified, but you can easily understand the significance of this. NORAD had to be right in terms of missile warning. It wasn't an option to be wrong. Time was important, but as long as you had it done by time enough to launch the United States missiles you were fine. So you had time to allow for that dual phenomenology, that just not the IR Source is seeing these things, but the radar is seeing them. You have two and the data correlates.

Then you have fairly high confidence that an attack is under way. You can rely on more than one radar sites and more than one satellite. Again, you're getting a fairly good comprehensive picture here that something is in fact happening so you don't make a mistake as kind of has happened from time to time thought exercises getting into the wrong channel.

All of this is fairly important, but it does change the dynamic when missile defence is part of the equation. It forces the decision to be made faster. Now, it's not the same kind of decision. Missile defence won't kill people. It's not going to destroy a city somewhere. Again, the government in Washington will be leaning forward trying to protect what they perceive an attack against one of their cities, understandably so. You can understand the dynamic of missile defence is very important from the perspective of Washington.

In fact, any mayor in the US or any State Capitol in the US, they felt the same way. When I sat in Colorado Springs, one of my duties was to sit as Command Director in Cheyenne Mountain. And frequently there would be tours that would come through. Canadians, Americans, you name it, they would come through and see the place. When an American civic tour came through, American leaders of you pick the city they all took their turn coming. Congressional leaders and Senators would come from the US system. Almost to a person they were appalled that NORAD had no way of responding to a missile attack, other than retaliation. Whereas Canadians came through, and never did, they were more concerned about missile defence. Not from the perspective of protecting their city, but from the perspective of what's happening with respect to what's happening in the US. In other words, there's a real grass roots support in the US for protecting US citizens from a missile attack. Whereas in Canada there was very little understanding of that and very little understanding of how important this was to the US. Both democrats and Republicans.

INTERVIEWER: Now, you've clearly described the new technology that will be coming on line soon. We're talking now in 2006 and onward. You indicate that the detection and warning times will be much compressed because the technology will be much better. From time to time, we see sometimes the Hollywood myth that all of these actions as a result of detection will be on automatic. You emphasized how in the earlier days of NORAD there was always a human confirmatory check in the chain. Will that human confirmatory check still remain in the future?

PENNIE: Where possible, yes. I think that's important. Certainly from the NORAD perspective, that's something I would insist on. Now, as time gets tighter and tighter in the missile defence era, I think there will be some parts of that that are going to be automated. There is still a human checking it. No decision will be made without a human cross checking that. But the times frames are shorter. The ability to do the depth of checking will be less, but the consequences of error are less because you are shooting a missile to hit something. You're just hitting a rock in space. You're not destroying a city. There are different consequences.

INTERVIEWER: When Canada was looking at co-operation in BMD, were you at any time asked to give advice, or did you testify in front of, any Parliamentary or other political committees?

PENNIE: I did give advice. I gave it regularly. I would send a quarterly report to the CDS. I would attend defence senior meetings and I would tell them exactly what was going on. There was no doubt in the Defence HQ mind as to exactly what was happening because I made sure that they were aware of it. I did have occasion to talk to Foreign Affairs. I did have occasion to talk to various defence committees, but they weren't really focussed on the missile defence file at all. They didn't call me in specifically for that. I had a number of Press talk to me from time to time and I was constrained as to what I could say because of the various rules we operate with in government. Nevertheless, I could describe what I was facing in terms of details of the reality. I just couldn't make a recommendation publicly.

INTERVIEWER: As the senior Canadian officer, not only in NORAD but in the United States, did you have any special mandate or direction from either the political or military HQ in Canada?

PENNIE: Nothing specific. My reference point was the NORAD agreement. I kept a copy of that in my desk and I got to know it very well. I had regular discussions and conversations with defence officials, the VCDS, DCDS and CDS and sometimes ADM (Policy). In fact, I kept in regular contact with a number of people in Washington as well because I had to respond to their concerns the same as Canadian concerns. There were a number of issues, but there was no mandate letter for the job. In fact, after 9/11 things were pretty mobile and shifting around on us, but the reason I wasn't too concerned about that was because of the regular contact I was able to keep with seniors in both governments.

INTERVIEWER: Did you have good communications with both American and Canadian Senior HQ?

PENNIE: Yes.

INTERVIEWER: Could you describe the communications links that you might have had?

PENNIE: Well, I mean, we certainly had the communication links that anyone would want. In fact, after 9/11 they were improved somewhat on the classified domain, but with Washington I had a classified phone I could pick up and call anyone in Washington DC and talk over issues. I only had the one classified means to talk to Ottawa, but that was still sufficient and we had a lot of UNCLAS. In other words, I had a computer that had three various functionalities, so I had three systems that I could switch between, one classified, two unclassified. I guess I had all the tools that I felt I needed to keep communications open between Washington and Ottawa and Colorado Springs.

INTERVIEWER: Did you have video as well as data voice links?

PENNIE: We used teleconferencing and videoconferencing. The videoconferencing was more common to use with our subordinate HQs, which included Winnipeg, because it was easier to do that than to have them come in every time, but they would come in on a periodic basis anyway. Sometime dealing with Washington, the Pentagon, we would have videoconferencing as well.

INTERVIEWER: Other than what you have already described, did you have any uniquely Canadian responsibilities?

PENNIE: Like any Senior Commander out of the country, you have two hats. You have the hats of, in my case, the D CinC of NORAD and also had the senior Canadian hat for Colorado Springs. I was more or less responsible for all Canadians in the NORAD system and responsible to the DCDS to make sure they were looked after and any disciplinary issues were dealt with and the business planning issues were dealt with, budgeting issues, those sorts of things.

INTERVIEWER: Can you give me a concise description of your duties as D CinC NORAD?

PENNIE: Yes. The Commander CinC at the time was General Eberhart, was away a lot. He had a lot of things to do and he was double hatted. He had the NORAD Command plus he had the US Space Command at the time, and that changed into the US NORTHCOM. That kept him fairly occupied. He relied on me to essentially run NORAD on a day to day basis. For most day to day decisions, they would come to my desk and I would have to deal with those. But General Eberhart had a number of communication facilities available to him no matter where he was in the world. I could always back-brief him on decisions that I had made, and choices that I had made, to make sure he was aware right away. And if he wanted to give me a vector right away, he had that opportunity. Quite often he would, but generally we had a good working relationship.

NORAD was organized and still is in three regions and there was an Alaska region, a Canadian region and continental United States region. Each of those three regions was run by a general officer with a deputy from the other country. It worked fairly well. It was well integrated and very seamless, a very smooth running organization.

INTERVIEWER: Other than the DSB Satellites and BMEWS, what sort of other sensors did you have around the periphery of the continent?

PENNIE: Those were the primary ones. There were a number of other minor sensors, but they didn't contribute fundamentally to the mission. I mean, we have all sorts of radars that could be connected into the NORAD system and after 9/11 we aggressively went at that. There are other sensors out there in space. They're used for other purposes that are classified that the US has. From time to time, they allow those to be used for

NORAD. There are a number of intelligence assets out there in the world, both Canadian and American, that are used for other purposes. From time to time they can be tasked on NORAD missions. There are a number of assets out there that NORAD didn't control, but had call on if they needed them.

INTERVIEWER: I assume you had good communications to other major US Commands?

PENNIE: Yes. Now, that went through some significant change and we'll probably talk about that when we talk about stand up about NORTHCOM. Certainly, the relationship with other commands was good. All the rules were fairly clear, fairly good working relationship I would characterize, but things did change as we went through the NORTHCOM stand up after 9/11.

INTERVIEWER: Can you give me a bit of an idea of the physical layout of NORAD HQ, and maybe a typical daily routine that you might have experienced?

PENNIE: Well, one of the things that impressed me when I first got there was how many people NORAD had relative to, say, some of the other commands in Canada which didn't have perhaps as many people to do those functions. But yet, it all got to be fairly clear to me, as I spent more time there, how important all this actually was. I'll talk a bit about that later.

My routine was fairly straightforward. When I first got there I worked in a building known as 1470. That building was on Peterson Air Force Base which is just on the outskirts of Colorado Springs. A new building was being built, purpose built for US Space Command, and we were to move into there for the last five or six months of my tenure and that became known as Building Two. Again, it was purpose built and had some improved facilities.

The routine was fairly normal. Normally, you'd start somewhere shortly after 7 o'clock in the morning. Normally I'd work to about 6 and those were fairly routine days. The exceptions were when I worked in Cheyenne Mountain or at various events going on. A shift work in Cheyenne Mountain, I would normally organize it so I do the afternoon shift ending at about 10 o'clock at night. That sort of allowed me to work from 7 in the morning to roughly noon at work, take a bit of a break, do some sports and then show up in time for my briefings and do my eight hour shift and then get back so I could get into work the next morning. I would do that maybe a couple times a month, three times a month at the most, and that would be my normal routine.

As the senior Canadian and as the Deputy Commander of NORAD, that position was sought many times for various Colorado Springs events. I found I was getting invitations to quite a number of things. My social calendar, my evening calendar, was fairly busy. More so than I would have anticipated. Now, this dropped off markedly after 9/11 for a few months because we were working so hard, everyone was, but it gradually crept back in again. On a routine basis, if we weren't in a crisis mode, I could expect to be out five

nights a week at some function organized in town. Certainly, there were other invitations abroad in the United States to address organizations. Sometimes I was invited up into Canada to address certain organizations – Chambers of Commerce, various defence related organizations, various industrial organizations that supported defence, the whole gamut. They would be interested in having this position come say a few words.

INTERVIEWER: Did you have a large Canadian staff to support you?

PENNIE: My direct staff was normal in the military context. I had one full Colonel equivalent, American, who was my executive assistant who handled basically the NORAD files. Then I had a major, Canadian, who basically handled the Canadian files for me. Those were my direct personal staff and some support staff that supported them, but that was basically it.

INTERVIEWER: Did you still have an aircraft at your disposal at this time?

PENNIE: No, I did not. That was long gone by the time I got there. Although, I was able to use the US system. If I had to go to Washington for a meeting I could bid – and I always got any time I bid – and I could get a US business jet equivalent run by the military, small air transport, to whip me into Washington and that was very useful.

INTERVIEWER: Was the Canadian Support Unit very large?

PENNIE: No. It's a fairly modest size. It supported all Canadians in the United States so it had a lot of outreach challenges. It was a very effective, but small unit. It served a unique purpose as a focal point, not just for administrative purposes, but allowed a place for Canadians just to come together to be among themselves and relax.

INTERVIEWER: During your time, approximately how many Canadians would have been employed throughout the NORAD system, not just at Colorado Springs?

PENNIE: In the US we had about 300 Canadians. Of course, as we had to pull Canadians out of certain positions because of the releasability challenges, we had an ending list of places where we could employ them [laughs]. We did some re-allocations. We didn't send too many people packing home. About 300 was the number and that was fairly steady. That included some people flying on the AWACS just outside of Oklahoma at Tinker Air Force Base where the Canadians played a very useful role of contributing to the American Airborne Warning and Control System, the E3 airplane platform that actually had a fairly fundamental NORAD mission for us.

INTERVIEWER: General MacDonald, I think, mentioned that he had hoped to get a number of positions in Space Command. Did you have success in placing Canadians in Space Command?

PENNIE: No, in fact, it was the opposite. It was because of releasability issues and the missile defence file that we had to pull people out. We couldn't find a niche where

people could get the qualifications or the security clearance to actually work on the issues involved because of releasability.

INTERVIEWER: Can you rate the quality of the Canadian officers and NCOs that were employed in NORAD?

PENNIE: By and large, they were excellent. You always have in a large group of people some people that make mistakes every once and a while and we dealt with that. By and large, the Canadians were older, more mature than their US counterparts, and they were able to certainly carry a load that was impressive when you compare it to an equivalent rank in the US system.

INTERVIEWER: Did you still have an official residence in Colorado Springs?

PENNIE: Well, I was the one that, kind of, didn't move into it. The official residence was there, it was available for me, but I had found that that residence was kind of old and tired, notwithstanding the money that was put into it. The Press made an issue of this, but I mean, it was an old building that needed work. It was located in a situation that didn't really suit the job anymore. My predecessor recommended that I should move on base and I agreed. At the present time, there was not a suitable accommodation on base, but I also moved down there with a six-year-old child. I had a school requirement that was fundamentally different than what most D CinCs have to deal with. When all things were considered, my wife and I made the decision that I would live in a place that was more suitable for his education and wait for an opportunity to move onto base. We elected to do that and so we ended up in a rental accommodation, not unlike any other Canadian down there. We did that and worked through the US system to free up a quarter on the base for the deputy position.

INTERVIEWER: How did that work for diplomatic entertaining?

PENNIE: I didn't see a problem. We were able to rent a place a little bit larger than what someone else who didn't have my position rent, and we entertained there. We had a budget, so we used that budget to help clean up and cater. It worked.

INTERVIEWER: Interview with Lieutenant General Pennie, end of side one.

END OF SIDE ONE

INTERVIEWER: Canadian War Museum, Oral History Program. Interview with Lieutenant General Pennie. Tape one, side two.

We talked a little bit about 9/11, I wonder if you could describe for me what you heard, saw and felt during that morning?

PENNIE: Well, at the time I was in Washington DC. I was, in fact, in the Pentagon and I had walked by the place that got hit the day before. On the 9th, I was in another

government building in a meeting with another agency dealing with NORAD-related issues. Somebody interrupted the meeting and said, “There’s been a strange accident. An airplane crashed into one of the twin towers.” We continued our meeting, didn’t think that was particularly concerning. Then we all had a picture in our minds of a small commuter airplane, a small light airplane, not an airliner. We didn’t realize that at the time. Then the same individual came back and said, “I think you need to see this. There has been another crash into the twin towers.” I was bigger than we thought. We immediately got tuned into one of the networks and saw what was happening. I got on the line back to my office and, of course, they were scrambling, too. Everyone was scrambling. I tried to make arrangements to get me back to Colorado Springs as soon as possible. And that ultimately was done, but it did take a number of hours before that happened.

It was interesting because I felt kind of frustrated not being able to get hands on, but I was also reassured that things were being properly handled back at the other end of the line. Interesting, as I made my way with another senior person, we made our way out to Andrews, it was gridlock. It was gridlock because every government office felt they were potentially the next target so they all let their people go. All the people hopped into their cars and out onto the streets pretty well at the same time [laughs]. The expressways were plugged with people trying to get home. It took a long time to get to Andrews, which is just as well, because the airplane took a long time to get there, too, because everyone was busy doing other things, more important things.

It was kind of eerie and I recall, very clearly, being able to see the NORAD jets overhead, ultimately, of Washington. I also heard the local radio stations as we were inching our way towards the airport. We had time to listen to the radio stations locally between the odd cell call. It was pretty clear that the presence of those fighter jets over top of Washington had a very calming effect on people, especially the radio announcers who made a point of noting that. It was kind of reassuring knowing the system was working from that perspective.

There’s a couple of other points I should mention as to the actually day, as to what was happening in NORAD. In NORAD on that day, there were two events going on. One of them was a NORAD exercise. We routinely do this, every once and a while. That helps explain why the response was a swift as it was, in part. The other thing that was going on was, the Russian were having an exercise.

When the Russians have an exercise it was their long-range strategic bomber fleet having their exercise, and they do this periodically a couple times a year. Whenever they could get the funding at the time, they would do an exercise to train their crews. And I’m sure they would probably do more if they had more funding. Part of their exercise they would deploy to their northern deployment bases which were their staging bases, essentially to conduct an over-the-pole attack should that ever be required. As part of the training for their crews, they’ll fly out over the Arctic Ocean, over the ice. Some times those crews will approach the Air Defence Identification Zone. Sometimes they will penetrate the Air Defence Identification Zone. They used to do this routinely during the Cold War, but

some of the more seasoned pilots probably want to show the younger folks what it's like to have a F-15 or F-18 to come up and say, "Hi!" I'm surmising, but every once and a while that would happen.

In the context of 9/11, you have to remember that there already was some people in Cheyenne Mountain doing the NORAD exercise and monitoring the Russian exercise, just to make sure that they didn't surprise us with something. Things were working reasonably well between the Russians and NORAD at that particular point. There wasn't a lot of tweaking, but every once and a while you'd get these sort of things. We wanted to be ready. We didn't want them to think we weren't watching. It was very much a sense of pride among the whole NORAD system to be able to be there and intercept them very shortly after they crossed that line [laughs]. So we wanted to make sure that we were able to do that.

Now, as part of that process, General Findlay, who was the Canadian two-star at the time who was running NORAD operations, he was running the Canadian exercise with his team and he was monitoring the Russian exercise. As the operations officer, you would expect that. Because of the fact that the Russians operate during their day, which is our night, he had elected to do the evening shift. He was actually coming off shift right at 9/11 with some of his team. He was just doing his post-shift reporting, just documenting things, when someone tapped him on the shoulder and said, "You'd better look at this." He ended up staying up for a couple of days straight as he kind of turned to and started to deal with the new problem.

As it turned out, the crew that was on duty at that particular time was the Charlie Crew. Charlie Crew is predominately Canadian. It had a Canadian Command Director and it had some Canadians running some of the centres. So a lot of Canadians were involved in that initial reaction. It was actually completely neutral of uniform or nationality. The fact that our CD was, in fact, Mike Gellie, a Navy captain, four striper, who handled the situation extremely well. Some of our staff in various key positions – again, it didn't matter if you were dealing with an American or a Canadian, the reaction was identical. It was smooth. It was correct. It was appropriate. It really was phenomenal. Now, having said that, I don't want to take credit away from other organizations as well because 9/11 was an event that shocked two nations fundamentally. It was a huge surprise. I wish we had been better prepared for that sort of thing, but the reaction was nothing short of outstanding.

I think in Canada we had our two fighter bases in Bagotville and Cold Lake, on their own, just watching this without direction from anybody, they just started preparing airplanes and getting them ready. They figured they would get a call to send someone somewhere [laughs]. They had more airplanes around than we needed, within minutes. The same thing happened on every US fighter base. We had fleet commanders deciding to take their fleet to sea, put their jets up on top of their battle groups, and then called us and said, "Where do you want us? Where do you want the radars?" They were positioning themselves for this event. At one point, we had four battle groups with their aircraft more or less under tactical control of NORAD.

INTERVIEWER: These are American Navy Carrier Groups?

PENNIE: These are American Navy Carrier Groups with their air wings aboard and their fighters providing protection for the coast. In fact, in the course of the next few days, as they needed to get back to their training for their next deployment, they would call up NORAD and say, “Can you release us now?” [laughs]. They didn’t have to, it was just courtesy. That’s kind of the situation. I think the whole North American defence framework, I think, reacted extremely appropriately.

I think it was worth noting that at 11 o’clock our time, or at least that morning D.C time, the Russians called up and had a press announcement that they were cancelling their exercise. Probably not a bad move because the last thing they needed, or we needed, was to have an entrepreneurial Russian bomber pilot entering our ADIZ at that particular point in time when we had over a hundred armed aircraft over top of all the cities in North America. You know, kind of nervous [laughs]. It was prudent on their part to have done that and it was certainly appreciated by me. It was an event that I think was extraordinary.

The reaction among the FAA was great. I think you have to understand though. I mean, the last hijacking in North America had been some ten years earlier and it had been someone requesting some demands and to go somewhere. Nobody had in mind suicide hijacking.

INTERVIEWER: Before this event, how much liaison did you have with the FAA, Federal Aviation Administration, and / or other agencies?

PENNIE: NORAD has always had a fairly in-depth relationship with the Air Traffic Control agencies. It’s important to plan for what might happen if an attack were to take place. It’s important to have all these plans worked out between all agencies involved. In fact it was so important that what NORAD had done is establish a counsel to bring them all together. That was done years before 9/11, but it would bring the Air Traffic Control agencies, the Custom agencies, the Intelligence agencies, the NORAD agencies together with Coast Guards, for example. These are all players that play in the security in North America from an air perspective. We had done that.

One of NORAD’s real concerns during that time, and I think it’s still valid, was: what about a seaborne attempt to do some damage on North America by launching something that would be in the air? I don’t mean an aircraft carrier. I mean, some sort of drone or some sort of device that could be launched from a ship at sea that really had no intention of landing. There are cargo ships in North America that just happen to be cruising by, how would we deal with that? Because it crosses the intersection of NORAD and Coast Guard and US Navy, or the Canadian Navy if it’s in Canada. All of these sorts of things were issues that we talked about in the session. How would we deal with that? But it also allowed us to talk about the whole Air Traffic Control authorities and how we would

control that situation. That dialog was fairly robust and ongoing and had been for decades, it's not new.

INTERVIEWER: Had you been involved this was with the so called 'War on Drugs', for instance, in NORAD?

PENNIE: I wasn't involved because the war on drugs was not new. We did participate by supporting various counter-drug operations from time to time. Generally speaking, we might re-direct a NORAD asset to try to help out, but we would try to back fill that as soon as possible because it wasn't primarily a NORAD mission. That worked fine. I didn't see any major challenge because I was only there three weeks before 9/11, and after 9/11, the counter-drug stuff seemed to be kind of back seat to everything. The real challenge for NORAD on 9/11, notwithstanding the good reaction, was how to systemically improve the situation.

The good reaction, by the way, should include NAVCAN and the Department of Transport in Canada because the United States closed its airspace and a lot of these planes filled with passengers had to go somewhere. A number of them couldn't go back to Europe or wherever else they had come from. So Canada accepted them. They didn't have to. They had to go somewhere. They had to land. We had a number of situations like that, some really huge stories come out of especially the east coast – Gander, Halifax, places where airliners were put down. Gander and places like that, I mean, they took more than their whole population in terms of passengers and looked after them. The feedback we were getting at NORAD well after the event was quite phenomenal. Some of the passengers were really impressed. They would sit on those airplanes for a number of hours, patiently, waiting for something to happen, because who expected all these thousands of people to arrive in Gander unannounced [laughs]. A school bus would arrive and would take the people out, baggage stayed on the airplane, and the people would go and be billeted in homes or schools or somewhere. They'd all go to places. There would be townsfolk assigned to them. The high schools stood down and the civil challenge of the high schools students was to look after their particular assigned passengers – the 'plane people', as they were called. So, for a day or two days or whatever length of time that particular plane group was in town they were looked after by the townsfolk. Because they didn't have their clothes or baggage. They had to have their clothes washed and various necessities looked after. But all that was provided by the town, essentially by the folk in the town. Then, at the appointed time, they were rounded up, back on the bus, back to their airplane and then they took off and were on their way.

INTERVIEWER: Tell me about getting back to NORAD HQ.

PENNIE: That happened in the early hours of the 10th. We made our way out to Andrews and got on the airplane. As we took off, it was a very eerie day because the Pentagon was still burning and I could see it because we went right over it. There was no one else flying. There was very few aircraft in the air. The FAA had shut down the airspace. That decision to shut down US airspace effectively transferred control of the airspace to Commander NORAD. So NORAD was controlling anything that flew,

because that was just the plan, not because it had to be that way and it wasn't because it was needed *per se*. Someone needed to control it since it was closed and we had a lot of military aircraft flying around, so we had to take it over. I was able to go Andrews to Colorado Springs VFR direct without any air traffic control concerns [laughs] because there was no one else flying. We went right over the Pentagon, which wouldn't have been normal routing, but I could see it burning. I could see that I had walked right by that space the day before at about that time in the morning, so it was interesting. I knew some of the people in there and I kind of had the sense of how they'd be feeling. Well, we were all kind of speechless when we flew by.

INTERVIEWER: So NORAD then took over the airspace and controlled it for how long until the situation returned to a semblance of normality?

PENNIE: It was about two days when FAA decided they would re-introduce – and, of course, reintroducing normal air traffic took some time. The airline industry was the industry that suffered the most. They had airplanes where they didn't need them to be and they had crews where they didn't need them to be. They were stuck where they were.

INTERVIEWER: Completely dislocated?

PENNIE: They were quite dislocated. Before the airspace could be opened, the airlines were asking for some time to kind of get things re-positioned because their ops centres were working pretty hard trying to figure out what to do next. There wasn't a standard issue for them. We had to, kind of, gradually open the airspace, first of all allowing the airlines to start to re-position. In some cases, no passengers at all, just to get things back to the start place and then gradually open it up. Canada was very quick to open up. They opened up a little bit ahead of time to get domestic traffic going in Canada. Those were the decisions made by FAA and Transport Canada and NAV Canada in Canada. We respected those. We didn't have a particular issue.

At the time, those working in Cheyenne Mountain, they really didn't know how many high jacked planes there were. The fog of war really does apply when you're in serious operations. At some point, they had a running count of potentially up to eight hijacked aircraft just based on reports that they were getting into the command centre. It was pretty interesting. Now, over time, they were able to whittle that down to get to the truth. It was kind of confusing. Certainly, one report caused the Command Director to close the doors of Cheyenne Mountain because there was a report that there could have been airliners targeting Cheyenne Mountain.

INTERVIEWER: You mean the big blast doors?

PENNIE: Yes, which is the first time they were ever actually closed in what could have been a hostile situation. They weren't closed until General Eberhart got there. General Eberhart was able to travel to the mountain. He sat there in the mountain and he was able to take control of things and General Findlay helped him out. Between them, they

made lots of phone calls and kept pretty busy trying to coordinate things. Within a few hours we had armed aircraft over every city in North America, essentially.

INTERVIEWER: Now, such a momentous event obviously had some tremendous downstream effects on NORAD. Can you outline some of those?

PENNIE: I think the biggest impact was, as I described earlier, NORAD was positioned to protect North America against an outside threat. A threat emanating from within North America, from within the United States, was something that really wasn't part of the calculation. The Cold War ended a long time earlier and people really weren't prepared to fund the modernizations that were required. NORAD had to go through a pretty major transformation to not just look outside and protect against threats coming, but to understand the air picture and what's happening inside, because reactions on these sorts of events really have to happen fairly quickly. You really have to have that air picture to understand and make appropriate decisions. We only had the capacity with our computer systems to only see a few hundred tracks. Well on 9/11, there were 8,400 airline tracks alone in continental United States. The magnitude of what we had to look at had to, kind of, jump technologically by a huge jump. We had to take technology and move it 20 years. Of course we had the paperwork to do that [laughs]. This isn't something we hadn't been looking at before, but the speed for which we were going to have to do things had to be different than what we normally would have expected.

We had a lot of ingenuity all through the organization. A lot of people found a lot of ways to increase the capacity of our existing computer system and a lot of people found innovative ways to add capacity to our computer system in a kind of button-on way. All of this was happening. Fortunately, the staff work of NORAD organization over the years had produced some pretty good notion of the way ahead. Our challenge was to coordinate and line up these activities because, certainly after 9/11, if anything Washington was prepared to throw more money at the problem than we could accept right away. Initially, money wasn't our limiting factor any more. It was how quickly we could get these improvements in place. The challenge the staff had was to, kind of, line up these things and prioritize. I played a role in making sure that was done a certain way and getting on with the job, to get it done as professionally as we could to increase our capacity. It took about a year to, kind of, go through this. [Indistinct] incremental steps and count the options as people figured out how to jerry rig fixes that kind of worked for a while. We had to, kind of, institutionalize some of that and shape it and move it forward as a whole. I think within a year we had the capacity to handle a lot more tracks and to understand.

Now, this involved doing a whole number of things, not just adding technical capacity so we could have the radar feeds brought in. One of the challenges with the old system is, you could always have radar feeds, but the algorithms weren't known. So the computer, since it could only display a fixed number, it would on its own by the algorithm embedded in, would decide which ones it would show you. We didn't know what that algorithm was, so we had no confidence that we were seeing all the important tracks in a given area [laughs]. Some key ones could have been dropped because we didn't know.

That was the kind of challenge we had technically. We solved that about after a year, but it did take time. Of course, it's improved ever since. We had to fundamentally take a capacity of only a few hundred and get it up to about 40,000. That's the capacity that we had to move it to. So it was an order of magnitude change. Technically, that was achievable, but it took time to get it into place in a coordinated way.

Also we had to deal with the quality of radars. The FAA owned a lot of these radars. The FAA used to be US military and it branched off and became its own organization. Over the years, it's had its own challenges getting radars funded. These are very real challenges from the point of the FAA. Some of the radars hadn't been technically worked on to get optimum performance from them in quite some time. The reason is quite simple. If you're controlling airplanes that are cooperative you don't need a primary radar picture. You can have a secondary radar picture. By that I mean, an aircraft that is cooperating with you will have a transponder and that transponder will augment and give a signal back to the radar that tells you exactly where it is. That means you can get a range quite a bit further with your radar because the transponder will give you an augmented signal that you can then read that airplane. But on a hijacking, these people were trained enough to turn off their transponders. So, unless your radar is giving you a very good skin paint, unless it's tuned properly, the range of those radars is drastically reduced from what air traffic controllers are used to seeing and what radar controllers are used to seeing. We actually had to use a military unit to work in conjunction with the FAA to go around to a lot of the radars in continental US and fine-tune them. We found some of them were operating around 40% capacity and we had to improve them. In some cases, we couldn't get them too much more than 60 or 70% because they were just old technology, but they certainly could be improved and many were. Many were drastically improved and we could tell from doing the assessment. The FAA was really helping us do this. I mean, they wanted to get improved picture too. It was just a question of cost and how we would work out that particular program. That was part of it, too, getting the radars upgraded so we could not just get the feeds, but get quality feeds.

Of course, there's a lot of radars in North America and getting them all fed into the right place all took some time, all cost a bit of money. We had to work that out with the various Air Traffic Control agencies. There was a lot of work doing that, too. Working out protocols, no Air Traffic Control agency would ever want to be in the situation of passing on a 'shoot' order and for legitimate reasons. That's not their mandate and that's not their liability [laughs]. That's a military liability. We had to work out a way where we could put – in some cases we put controllers right into air traffic control centres. Initially, that's what we had to do in Canada and the US because we did not have the techno-fix to actually communicate directly with that airplane and pilot once he was on air traffic control parameters.

INTERVIEWER: So you're saying a military air traffic controller would be there and he would be the conduit through which 'shoot' orders would be given?

PENNIE: Yeah. He wouldn't be an air traffic controller. He would be what we call in Canada an Air Weapons Controller.

INTERVIEWER: Right.

PENNIE: It would be his job to direct the fighter to the target and pass on a shoot order if, in fact, the shoot order was ever required. So we had to have that system in place to protect the Air Traffic Control agency because there's some parts of the country where we put fighters – and I can't tell you exactly where – where we didn't have direct line of sight communications with the NORAD facility. That was always preferred and in some cases we had that, and in some cases we didn't. We had to supplement that so that in any case, inside North America, we would have confidence that we could put effective control solution if it required the ultimate solution, the ultimate sanction, which we hoped we never needed. And a bit of training for the pilots. Functionality wasn't a lot different, but the whole control procedures were really important.

We had to train our crews. I don't mean just the flying crews, but I mean all the HQ crews in the sectors and the regions. The regions are divided into sectors and you get down to sector levels and that's where you have specialists who are directing the fighters onto the targets. And if they have direct contact with the fighters they will be the ones giving the shoot order finally. Now they can't give it. They're not authorized to give it. They have to get that through Commander NORAD.

INTERVIEWER: They simply relay it.

PENNIE: They relay it. If that relay doesn't work, then there's not much point in making that decision up the chain. All that training had to take place and we did exercises and scenarios to train all the crews. We ran a whole bunch of scenarios and exercises and drills. In fact, we rented airplanes and pretended they were airliners to effect the final training package here to make sure they were up to scale. One of the challenges was, if you ever had to engage a hijacked airplane that was a suicide – in effect, becomes a cruise missile and it can be driven into any high value target. But at what point do you engage? At what point do you allow the passengers the opportunity to turn around a potential dangerous situation? If you engage too early, you may have denied yourself a chance of saving the event. If you engage too late, well, the airplane on a trajectory that won't change, even if the wings are off [laughs], it's going to go where it's going to go. Finding that sweet zone and convincing the politicians who are ultimately responsible for making those kinds of decisions as to what the time frame actually is. And getting them willing to exercise in both Ottawa and Washington because an event could happen in either country. That was a large part of our focus. The techno piece, the practical piece and making sure we had the radars. In fact, we've used mobile air traffic control radars the military owned to put in certain places to get better coverage for temporary purposes. The Olympic Games in Salt Lake City is a good example where we moved some things in place. Kananaskas, where the G8 met, we put some things in place. This has kind of become routine for NORAD to provide these sorts of protection measures as part of the overall security framework for major events. It really has changed the dynamic of NORAD.

But I guess I've lost my track here. I was trying to focus on...the techno piece, the procedural piece and the training piece. The training piece went right up to the politicians who would ultimately have to make these decisions and trying to get them on the line during these training exercises. They are really busy people and doing an exercise usually isn't first on your priority list of things to do that day [laughs]. But getting their time so they would understand when a decision was required, and how to train the system. So, if a Command Director was dealing with a situation he could then walk through, and explain what's happening, if General Eberhart can't be on the line or if I can't be on the line, to make sure that the ... Secretary Rumsfeld on the line, he needs to get the right kind of words to key him in certain ways. All that had to happen.

INTERVIEWER: Did you consider that was successfully done with the particular emphasis, of course, with the political interface?

PENNIE: Yeah, I think it was. You could always do better, but I think, given we've never done that before, I think post 9/11 there was a sense of urgency, a sense of importance to the mission. It wasn't that hard to get people's attention at that particular point in time. A couple years later? And again, you can talk to my predecessor and see how it's going today [laughs].

INTERVIEWER: One of the things that C inC NORAD had to do, of course, was that he was double-hatted as Commander Space Command. And one of the upshots of 9/11 was Homeland Defence and, I guess, eventually NORTHCOM. Can you talk about the institution of those things?

PENNIE: Yeah. One of the things – this is a fairly important piece. The NORTHCOM stand-up was part of what may have been the biggest change in the US Command structure since the 40's, certainly since the 80's. It was a fairly significant change. Many Canadians don't fully understand the full significance of what happened. After 9/11, the powers that be – and I'm referring to all the senior people in Washington, in the Pentagon in particular – felt that something had to change in terms of defending North America, certainly defending the US. NORAD was considered the hero of the day because, rightly or wrongly, inside the Pentagon we were viewed as the heroes. Because our reaction was seen to be appropriate and sensible and relatively straightforward, but there when the need was there, even though everyone realized that we had never prepared for this.

There was such a thing as a 24-star letter. This was a letter signed by the chairman, the vice chairman and the four chiefs of the services in the US to the Secretary of Defence, asking him and advising him that it was time to consider a single command for the defence of the US. Because of various rice bowl issues in the US, this was something that had been talked about and studied, but there was no great forcing momentum to create something like that until 9/11 came along. Then, all of a sudden, whether this is easy or not, we got to do it.

So with the advice of the Chairman and all the Chiefs of Staff, Secretary of Defence Rumsfeld, he did two things. First of all, he went out to all of his combatant

Commanders and asked them their opinion on how to do this and gave them all 30 days to come back with some ideas. Not a bad move. The second thing he did is he sent a letter to Canada saying, “We are considering re-organizing for defence in North America. NORAD’s not a bad model.” I don’t know what he put in the letter, but basically that was the line: “Do you want to be part of this? We can do it all North America wide”, which I thought was a brilliant idea. And I recommended so to the CDS and the senior players in Ottawa in the Defence Department saying that I thought this was a tremendous opportunity because we could leverage what we had done well through 9/11 and try to shape this so it would suit our interests. It was an opportunity, a huge opportunity, and it could take NORAD from being uniquely Air Force and make it tri-service in a huge way. Unfortunately, the answer from Ottawa, which was signed off by our Minister of Defence at the time, I think in December said “No.” He didn’t want to do that. I think that was an opportunity lost, a huge opportunity lost.

INTERVIEWER: Did you get any explanation as to why they took that decision?

PENNIE: None that satisfied me, but I didn’t get an explanation. It was generally the Foreign Affairs staff were nervous about it. They liked NORAD the way it was. They saw it as being a value-added. It was a surprise to them and I don’t really think they understood what they were saying ‘no’ to. I really don’t think they understood the opportunity. Certainly, the Defence Department did, but I don’t think they were effectively able to convince Foreign Affairs that this was an opportunity that they had to consider seriously. I think foreign Affairs was reluctant to go that particular route. That’s my understanding. But certainly it was nixed by Foreign Affairs. I think Minister Eggleton was the Minister who had to sign the response, but it was a negative response. I know that Secretary Rumsfeld was, from what I’ve heard, was somewhat disappointed with that response.

INTERVIEWER: Well, now you had the United States establishing NORTHCOM and Canada indicating that they didn’t want to play...

PENNIE: This wasn’t NORTHCOM. Sorry to interrupt. This was an idea to establish a North American defence organization of some sort. It had no name. It had no structure because at the time Secretary Rumsfeld sent that letter out to Canada he hadn’t heard back from his combatant Commanders. They didn’t know what shape this would be. They didn’t know what they would call it. All of this was being worked. There were some ideas floating around. But no ideas had been approved by the military chain of command, let alone the political chain of command. It was after Washington got that letter back that they said, “Well, we’re still going to do this, but we’re going to create a US-only command.” NORTHCOM didn’t become the name until February of ’02. In February of ’02, they had done several months of work now, taking together these inputs from the various Commanders and trying to distill this into something. Then they made a decision that they would stand up something that they were going to call US NORHTCOM. That was sometime in February of 2002 when that decision was made. We had the opportunity back in the fall to influence that before it got made. It had to be

US-only because we weren't going to play. And then they had six months to figure out where and how.

A team was put together to do that. That team involved a number of my NORAD folks who were taken from the NORAD duties. They were US folk mind you. They were taken from their NORAD duties and put on this team and some other people were put on this team. They were put together to try to produce options. Options with respect to location. Options with respect to personality, what would be in what would be out? Would this work? Etc. etc. etc.

There were other things being studied at the same time. Once you are going to create something like US NORTHCOM, then one of the political directions on the US side was: "We're not going to create more 4-stars here. We're not going to create more HQs. I want the same number at the end of the day. I just want to re-organize them." [laughs] Not a bad political direction to have, but it did constrain the option space and it meant that if your going to create something called NORTHCOM, something else had to give. There had to be a sort of ripple effect. It was a complicated piece on the US side to figure out and it would have been complicated if Canada had played, too. It did take six months for them to figure out, which is a short time frame to stand up a HQ of that consequence, but they achieved it.

During that six months running NORAD, I had the challenge of having lost some of my best and brightest folk to go to this particular NORTHCOM stand-up team. I had to carry that load with the rest of the NORAD staff, which meant the Canadians I had left were doing a bit of double duty at a time. It was a significant stress on the system because we were still doing all these changes post 9/11. It did create a lot of stress on the organization. Fortunately, on the US side, the manning for NORAD was robust. When I first got there, I kind of thought there was a lot of people to do what we could have done with less. But after 9/11, every bit of that capacity was more than used because we went to 24/7 operations, really, for three or four months. Even after that, it was long hours, a lot of weekend work and a lot of activities.

The NORTHCOM piece, we had to figure out how NORAD would interface with the NORTHCOM piece. We had to keep apace with... fortunately, some of my staff working on the NORTHCOM piece kept dialog with because they were back and forth to Colorado Springs a lot and I could keep pace with what's going on. Of course, General Eberhart was influencing this to the best of his ability to not disadvantage NORAD in the process. I think all of that worked out to the final solution which was put in place in October where US Space Command would stand down, US NORTHCOM would stand up in the same place. The same 4-star would be in charge of NORAD and US NORTHCOM because there was a synergy between NORAD and NORTHCOM that made sense. The challenge on the US side was the Space piece and the challenge for NORAD was we, kind of ,connected space-wise. And now that's going to move to Omaha, Nebraska.

There's two huge commands made here. One is STRATCOM and one is NORTHCOM. Now, NORTHCOM had the mandate to protect the continental US. Clearly, NORAD had an overlap and a challenge dealing with that particular elephant as it was being built. On the other hand, the Space warning piece was now moving from US Space Command on the US side to the new STRATCOM in Omaha. Now STRATCOM of old was the nuclear command and, of course, no one would talk to them because they are just the nuclear guys and at the end of the Cold War they had less to worry about. A lot of process was in place because nuclear weapons you just deal with, you know, you don't want mistakes. You have a lot of process around them. So STRATCOM had to go through this tremendous transformation, huge transformation, and make it one of the major support commands for activities worldwide. Again, what that established was kind of a three-corner HQ situation which was fundamentally different that what you had before. What you had is, STRATCOM eyeing the NORAD missile warning piece saying, "We ought to be doing that." And you had NORTHCOM eyeing NORAD saying, "You're, kind of, doing part of our mission." So NORTHCOM and STRATCOM, the new entities built up and became mature, they started looking at the NORAD piece. This plays right into the missile defence file because, had missile defence gone to NORAD, which it logically ought to have done so because for mission that's a clear fit, but politically that wasn't going to happen. Now you have NORTHCOM and STRATCOM fighting over the missile defence piece. NORTHCOM taking up the NORAD line saying, "Defence of the US, we ought to be doing that." STRATCOM saying, "Missile defence globally is our responsibility. North America is just a piece of it. So we should be doing it." Again, the struggle between these three commands has been ongoing ever since. We set up a dynamic here that made it not that clear.

INTERVIEWER: Is it still unclear?

PENNIE: I shouldn't say unclear. I'm saying there's competition over who owns the mission. The NORAD mission is pretty clear and it hasn't changed, hasn't changed a bit. It's just that the missile warning piece that NORAD provides is pretty clear now, that over time it's going to be totally irrelevant. It's just a question of when the technologies are put in place. So STRATCOM is positioning itself to take over that responsibility. If nothing changes, STRATCOM will then have *defacto*-ed that responsibility. NORTHCOM is still effectively – and this is a US decision and it could change but, certainly when I left, NORTHCOM was effectively positioning itself to handle the North American piece of US missile defence.

INTERVIEWER: So Canada didn't participate in ballistic missile defence, didn't participate in the predecessor to NORTHCOM. How does that affect Canada, in your view?

PENNIE: I think it had an impact. I mean, we are living with that impact today. If you were to talk to my successor, you would probably get a better sense of what that impact actually is because he's living it. I think the impact is pretty clear. That is the marginalization of NORAD. Now, this was known. I made the potential of NORAD being marginalized quite clear to my superiors in Ottawa. I talked to the Minister of

Foreign Affairs. I talked to the Minister of Defence and I talked to a lot of their key staffs. I talked to the Privy Council office. I made it quite clear to anyone who was interested in listening that over time, if we don't deal with this, we are going to see a marginalization in NORAD. That's probably what's happening today. I think we can see evidence of that in many areas.

Now, as NORTHCOM grows it's going to have, and probably does today, about 2,000 people. Now NORAD's HQ has about 300 people. If you just look at the manpower – and STRATCOM's got about 2,000 people. I don't know, but in that order of magnitude. You've got these rather large HQs who are looking at the mandate, in particular NORTHCOM mandate, to protect the United States, and they tend to look at NORAD as kind of a task force that does a niche of what they do. It's like, if we had made a different decision, we could have had the large piece being a follow-on from NORAD doing everything, and a small piece down here doing US only. That could have been the solution. That would have given us a 50/50 say in strategic questions because both capitals had a role to play in the NORAD framework. They would have given us a framework for defence in North America that would have given Canada a say about its way. But the way it has gone today, with the elephant being the NORTHCOM piece and NORAD just being kind of air defence only, is what is it going to be left with. And that's clear to everyone in that context today. Then what you really have is a very niche mission that is being done differently than the overall mission.

As most people who deal a lot with the United States Services will recognize, NORAD's unique. There's no other place in the world or any other country, let alone the United States, deals at the binational level and the binational command in the same way that NORAD and Canada-US co-operate together. To have 50/50 strategic direction as a principal in any kind of allied operation is not usually the way the US operates. They prefer to operate on a bilateral basis with each ally. As each ally brings stuff to the table, they are listened to with respect to major decisions with respect to that particular operation. That's the way they work in every other relationship with every other ally. I'm afraid NORTHCOM has come to the table looking at giving our previous decisions at NORAD as a real anomaly. And to the extent that they are able to convince people in Washington DC that it is an anomaly, and it is, then the trend here is clearly towards trying to deal with Canadians issues on a bilateral basis as opposed to a binational basis. I think that's an issue that ought to be made more clear to more people in this country because I think we have lost some significant ground here in terms of our ability to influence the US system.

I mentioned the stand-up team to create NORTHCOM. They worked very hard and successfully. I thought they did a great job. The result was, the decisions were made to put NORTHCOM in Colorado Springs co-located with NORAD and hit an IOC in October of '02...

INTERVIEWER: IOC being?

PENNIE: Initial Operating Capability. In 1 October, 2002. General Eberhart was able to achieve that by leveraging off some of the other part of the US system that were already in place and chopped over to him. That was the IOC. Over the course of the next period of time until I left NORAD, NORTHCOM folk were arriving. In drips and drabs, but they were gradually flushing out and establishing their HQ, driving their capabilities and understanding what their mission was and coming to grips with the enormity of the responsibilities and establishing the various command relationships and dealing with all the other commands, including trying to deal with NORAD and figure this out. Because for many of them that came in, they weren't use to dealing with an ally in the same building because it's not the way the United States normally works with many of its allies. It was an adjustment for them and it certainly was an adjustment for NORAD to deal with the new kinds of mission. It was in many cases often. Even in Washington, there was some confusion as to which mission was a NORTHCOM mission and which mission was, in fact, a NORAD mission. The issue then became to make it clear which mission was, in fact, NORAD, because NORAD didn't change...[tape ends abruptly].

END OF SIDE TWO

[First minute or so of tape is blank. Narrative picks up in mid-sentence.]

INTERVIEWER: ...NORTHCOM people who came in tended to regard NORAD as an anomaly and really were thinking that the NORTHCOM mission should actually include NORAD. My perspective on it is that the NORAD missions were unchanged, NORTHCOM would do everything else, but a NORAD mission by definition was still a NORAD mission. Of course, there was an adjustment process between the new NORTHCOM staff and NORAD to kind of work through these kinds of issues.

INTERVIEWER: Would you say that the NORAD-NORTHCOM relationship is still a work in progress?

PENNIE: Yes, I would say it is and I think you would have to talk to my successor to see historically how it unfolded. Clearly, this was a big change on both sides of the house and there was an issue of trying to identify which is the most senior or important command. NORTHCOM was so big, and they assumed more important, and would have probably a larger mission with respect to NORAD than NORAD would think. As I was able to point out many times, NORAD's been a command since I guess 1957 or '58 when they finally signed the paperwork. And as such it was a senior command. It had been around longer. I also had to point out many times that it was a senior command, and a senior command means that it's senior not just in longevity, but because it's a binational command. It actually reports to the Secretary of Defence on the US side and the CDS on the Canadian side. In other words, it in fact gives the Commander of NORAD the authority to report directly to both capitals. Not just the authority, but the obligation to report directly to both capitals and not necessarily go through the staff chain established in either the Pentagon or in NDHQ. In that context, NORAD was quite a bit different than NORTHCOM and that was something the NORTHCOM people had some difficulty

coming to grips with. They could understand it on one side, but they didn't quite like it on the other. Those issues were certainly issues I was dealing with as I left.

A lot depends on who the Deputy Commander of NORHTCOM is because I think I had a pretty good working relationship when I left the position to make sure that that was understood. I still found challenges when messages would come in from Washington tasking NORTHCOM to do a mission that was clearly a NORAD mission. That's what I referred to earlier. And we'd always get that fixed, but clearly there was an impression that I felt that Washington was putting a lot of priority on making sure NORTHCOM was seen to be the command that – now, I have to be careful of choosing my words. Certainly, the command that would be probably the more important one in their eyes.

INTERVIEWER: You talked about releasability earlier and you mentioned that in relationship presumably to special access, nuclear plans, that kind of thing. With the added emphasis on Homeland Defence – US Homeland Defence, I mean – did you still see releasability problems?

PENNIE: Less so. The releasability problems were hinged around the missile defence file because so much of the technology was new and they weren't about to release it because we weren't part of the mission. It was fairly straightforward. There was nothing magic to it. The Homeland Security issues, for the most part, weren't really that highly classified. They were fairly releasable.

Another thing that made the releasability issue less of a problem was, in any US combatant command, the 4-star commander has the authority to do certain reliabilities if he judges it in the operational interest in the command. Now, with the operational mission of NORTHCOM being relatively close to that of NORAD – we're both defending North America, just different ways – releasability became less of an issue because it was pretty clear what should be released and what shouldn't in that context. Whereas, when dealing with the old US Space Command, there were a lot of space assets out there that might have helped the NORAD mission, but they weren't necessarily releasable to the NORAD mission. That's the context.

INTERVIEWER: Interview with Lieutenant General (Retired) Ken Pennie on 9 November, 2006. Interview ends.

TRANSCRIPT ENDS