



# PEACEKEEPING AND PEACEMAKING: Deter, Detect, Defend

## NORAD and the DEW Line

### Character Education

- Appreciate the importance of preparation and readiness
- Consider contingency plans for countries and individuals
- Stimulate pro-active and creative thinking

### Facts

- 7,400,000 cubic metres of gravel were produced for the construction of the 63 Distant Early Warning (DEW) line radar stations which became operational in the Arctic in 1957
- CFB North Bay monitors 47 radar sites of the North Warning System for NORAD, the North American Air Defence Command now called the North American Aerospace Defence Command
- 12% of NORAD's current 1,100 military personnel are Canadian

### Before the Reading

- Discuss some situations where a back-up plan helped you, your friends or family when something went wrong
- Athletes perform better when they picture themselves successfully doing what lies ahead. How would mental rehearsal/preparation help?
- Being defensively prepared is a great offence. How can a country's defences act to scare off attacks?

### Reading

"NORAD is a bi-national United States and Canadian organization charged with the missions of aerospace warning and aerospace control for North America. Aerospace warning includes the monitoring of man-made objects in space, and the detection, validation, and warning of attack against North America whether by aircraft, missiles, or space vehicles, through mutual

### PEACEKEEPING AND PEACEMAKING MINUTES



A map of North America near the Arctic Circle showing 30 radar sites spread out along the Distant Early Warning (DEW) Line. Running from Alaska, across Northern Canada to Greenland.  
Map Wikipedia Commons

### What the DEW line teaches us about the environment

Canada's manned DEW line stations completely ceased operations in 1993. Twenty-one sites had already been decommissioned during the 1960s as the DEW line transitioned to the unmanned radar stations of the North Warning System.

A great deal of thought and effort had gone into the construction of the DEW line in the 1950s. Mapping teams had travelled more than 1,600,000 km and reviewed over 80,000 aerial photos as part of planning for positioning of the radar stations. Here are other statistics:



support arrangements with other commands. Aerospace control includes ensuring air sovereignty and air defence of the airspace of Canada and the United States.”

*From the NORAD website*

The foundation of every reading in 2011 is the sacrifice of Canadian veterans during WWII. What they safeguarded at tremendous cost was, unfortunately, all too soon under attack shortly after WWII. The Cold War threats to hard-won freedoms must have seemed doubly upsetting to the 18,000 members of the Veterans’ Guard who served in both WWI and WWII. Imagine what Chief Joe Dreaver of the Mistawasis Cree must have thought after serving in both wars and losing two of five children serving in WWII, to see the free world facing new threats in the 1950s and even Canadian soil threatened.

In the 1950s and 60s Canada felt forced to go on the offensive again. The threat the Armed Forces hoped to detect, defer and defend against was the sudden appearance of Soviet bombers headed towards North America from their communist neighbour dangerously close to them over the pole. Communist expansion had already become evident at the end of WWII in Europe and in Korea in 1950.

As a defence the U.S. and Canada built 63 DEW line<sup>1</sup> stations co-operatively between 1954 and 1957. The DEW Line stretched 4,828 km across the Arctic to serve as North America’s electronic eyes and ears. Canadian and U.S. air bases had fighter planes on alert that NORAD<sup>2</sup> could order in the air in three minutes.

Rapid changes in technology in the 1970s and 80s made it necessary to update defences. NORAD became the North American Aerospace Defence Command and the DEW line was updated by 1988 to become the remotely-controlled NWS, North Warning System. NWS had 11 Long Range Radar sites, 36 Short Range Radar sites to fill in gaps between the larger sites and five Logistics Support Sites that contributed vital tactical data for NORAD. The preparedness of NORAD seemed effective in ensuring a peace-based life in North America. It was a northern communications safety net.

September 11, 2001 changed that.

Until 9/11, NORAD had focused primarily on offshore air defence. If, for example, North Korea had launched an intercontinental ballistic missile, NORAD would have provided a 23 minute window to act before it struck North America. NORAD defences were not set to detect, deter or defend against a domestic commercial plane acting as a manned missile. Strategic defence thinking had been too narrow.

- 417,690 metric tons of materials were transported to the north in all climate conditions
- 68 plus million metric gallons of petroleum products were shipped, of which almost 40 million metric gallons were in 818,000 metal drums
- Over 142,000 metric tons of steel were used during construction
- More than 20,000 people worked on the various sites in two-and-a-half years of construction

There was a hidden downside to this mighty effort.

The environmental construction standards of the 1950s were considerably lower than today’s standards. After decommissioning, the sites were found to be full of hydrocarbons, soil that contained lead and PCBs<sup>5</sup> and materials such as batteries, antifreeze, solvents and paint thinners.

A CBC radio story from 1997 tells of rotting vehicles in Arctic lakes, containers full of abandoned hazardous fluids and dumps leaking arsenic and PCBs.

The clean-up controversy still rages as burial of the toxic wastes poses problems for the future and shipping them away great expense. And, although there is northern employment in the clean-up and reclamation of the sites, there is also a continuing risk to people and the environment.

The DEW Line acts as a potent case study to look at other man-made constructions such as wind turbines and large scale industrial sites. The DEW line teaches us that we ignore the end-of-life cycle of materials at great peril.

In a great affirmation of solidarity after 9/11, NATO<sup>3</sup> began “Operation Eagle Assist.” Between mid-October 2001 and mid-May 2002, 830 crew members from 13 NATO countries, including Canada, flew 4,300 hours in 360+ operational sorties over the U.S. Additionally Canadian CF-18s were on continuous alert to respond to any potential aerial threat to the safety of Canada and Canadians. They conducted random air patrols across Canada and continue to be on alert into the present. In 2010 they provided aerial security for the Olympic Games in Vancouver.

NORAD, with the cooperation of the FAA<sup>4</sup>, currently monitors 40,000 domestic and 7,000 incoming international flights daily. According to a NORAD spokesperson NORAD can scramble fighter jets within a matter of minutes

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Col Pierre Ruel and BGen Christian Barabé check the radar screen in preparation for tracking Santa Claus.  
Le Colonel Pierre Ruel et le Brigadier-général Christian Barabé se préparent à suivre le père Noël à l'écran radar.  
<http://www.forces.gc.ca/site/Commun/ml-fe/photo-eng.asp?id=1976>

### The ultimate North American Defence: NORAD tracks Santa!

A mistake in a phone number in a newspaper ad near Christmas 1955 led numerous little folk to call up the US Colonel then in control of North America's continental defence system,

a forerunner to NORAD. The ad had promised Santa would personally speak with them. Tying up the red phone line that was to be used if the Russians were attacking was not a good idea. What turned out to be a heart-warmingly good idea was using volunteers to answer the phones on Christmas Eve to tell young people about Santa's progress from the North Pole. And thus a tradition that will be 56 years old in 2011 was born.

Below is information from NORAD's Santa Web Site:

"NORAD uses four high-tech systems to track Santa—radar, satellites, Santa Cams and fighter jets.

Tracking Santa starts with the NORAD radar system called the North Warning System. This powerful radar system consists of 47 installations strung across the northern border of North America. On Christmas Eve, NORAD monitors the radar systems continuously for indications that Santa Claus has left the North Pole."

"The moment that radar indicates Santa has lifted off, we use our second detection system. Satellites positioned in geo-synchronous orbit at 22,300 miles (35,888 km) from the Earth's surface are equipped with infrared sensors, which enable them to detect heat. Amazingly, Rudolph's bright red nose gives off an infrared signature which allows our satellites to detect Rudolf and Santa."

"The fourth system is made up of fighter jets. Canadian NORAD fighter pilots flying the CF-18 intercept and welcome Santa to North America ... flying alongside Santa and his famous reindeer: Dasher, Dancer, Prancer, Vixen, Comet, Cupid, Donner, Blitzen and, of course, Rudolf."

Until just before he died in 2009, 92-year-old Colonel Harry Shoup who took the first call on the "hot phone" in Colorado Springs in 1955 carried Santa emails from children in his briefcase as if they were important international documents. Col Shoup understood the power of the imagination.

to anywhere in North America. One hundred fighter jets stand on 24/7 alert.

And what does this have to do with peacekeeping and peacemaking? Well, in addition to international obligations to NATO and other peacekeeping missions, the Canadian Forces continue to build on NORAD's "deter, detect, defend" motto. They are working at being "Ready, Responsive and Reliable." They have designated Canada as its own distinct area of operations to design Canadian-centred defences against multiple modern-day threats.

WWII took the defence of Canadian values to foreign lands. The "Canada First" defence strategy currently under development takes up the torch from the 42,000 WWII veterans who lost their lives to protect a continuing peace in Canada.

### After the Reading

- What were some of the rapid technological advances of the 1970s and 80s? (Hint: They may be so much a part of your lives that they are invisible to you!)
- Why did NORAD and the DEW line probably act as a deterrent to the Soviets?
- Imagine conversations Chief Joe Dreaver might have with his three surviving children about the Cold War. What might have been some of the points in their conversation?

### Extensions

- Be Canada's foremost strategic thinker. Come up with two realistic scenarios against which Canadian Forces might have to protect Canada's soil, waters or air space in the next ten years
- The building of the DEW line did not consider the "end-of-life" cycle of the materials used in construction

and maintenance of 42 sites on Canadian soil.  
Research the environmental issues around end-of-life cycles of materials

- It's very proactive for Canada's Armed Forces to prepare "Canada First," a contingency plan for the future. What should be some key points in your own personal contingency plans for the future?

## Sources

- "About NORAD", at [www.norad.mil/about/index.html](http://www.norad.mil/about/index.html)
- Robidoux, Marie "Northern Lights: Reclamation of DEW Line Sites", *Northern Lights*, July 2008 at [www.profsurv.com/magazine/article.aspx?i=2188](http://www.profsurv.com/magazine/article.aspx?i=2188)
- "The Dew Line Construction Statistics", extracted from "The Dew Line Story" by Western Electric Company in 1958 is available at [www.lswilson.ca/dewstats.htm](http://www.lswilson.ca/dewstats.htm)
- "The DEW Line's toxic legacy", *This Morning Sunday*, CBC Radio Oct 12, 1997
- Terdiman, Daniel "Behind the scenes: NORAD's Santa tracker", Dec. 24, 2010, available at [www.news.cnet.com/8301-13772\\_3-10418101-52.html](http://www.news.cnet.com/8301-13772_3-10418101-52.html)

## Media Links

- [www.archives.cbc.ca/war\\_conflict/defence/clips/10475/](http://www.archives.cbc.ca/war_conflict/defence/clips/10475/)

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1 The main DEW, Distant Early Warning Line was completed in 1958

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2 NORAD, North American Air Defence Command, was formally established in 1958

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3 NATO, North Atlantic Treaty Organization was established in 1949

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4 FAA, Federal Aviation Authority

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5 PCBs were added to paint until the mid 1970s but banned in 1979 after concerns about cancer. DEW line stations contained an estimated 30 tonnes of PCBs in radio equipment, generators and paint which had been applied to almost all wood used in the stations