Alpha Ridge Test of Appurtenance (ARTA)

Newsletter #19

April 26

I really thought that Newsletter #18 would be the last epistle. I am, after all, completely away from the scene of the action. However, I received a delightful email from Don Mosher describing the adventures of the Aurora aircraft, and I thought it was much too good a story to keep to myself.

You will remember that there was to be a follow-on experiment that involved the Canadian Military and their Aurora aircraft. The Aurora was to drop Icepicks, which are devices that stick in the ice. The geophones in the Icepicks pick up vibrations in the ice and convert them to electrical signals, and these signals are broadcast to the aircraft where they are recorded. The interesting vibrations, of course, are the ones produced by the explosions detonated by our blasters and reflected by layers deep within the earth. The Aurora can monitor – I believe – sixteen Icepicks at a time.

Don Mosher acted as liaison between Ruth's project and the military. He was on board the Aurora, and he tells a great tale about their successes and their problems. With his permission (and his pictures), I include his email(s) below.

I did find out from Ruth that all the seismic people headed out of Eureka on Thursday, the 24th. This leaves only Jon Biggar and his group of hydrographers on the ice. They, I understand, will work until the end of the month.

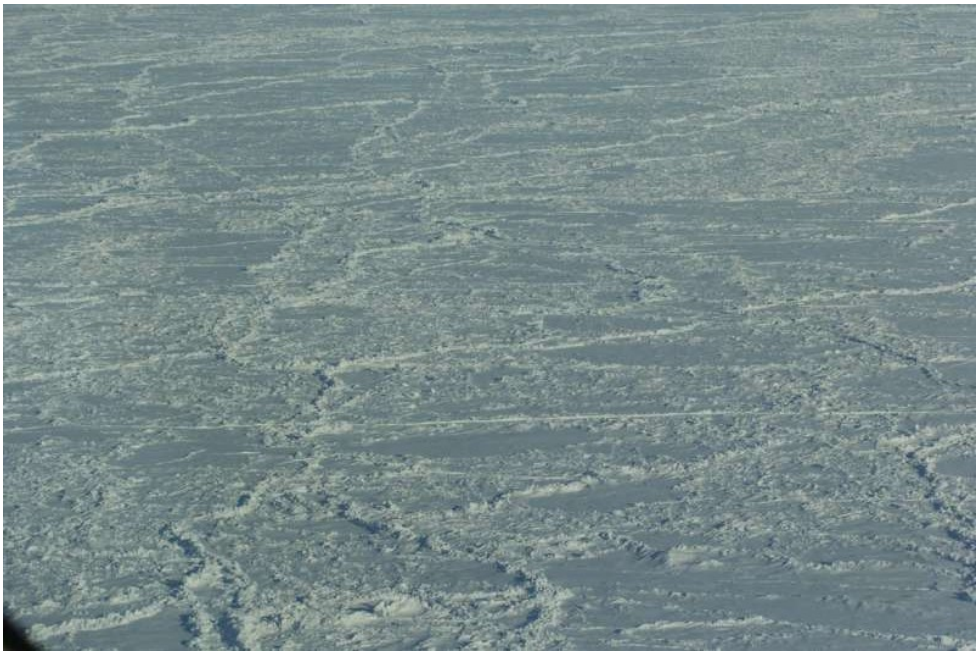
Best Wishes,
Ron Verrall.

The Aurora Crew in Thule. All pictures compliments of Don Mosher.

(From Don)
Hi Ron:

I've just returned last night from the Great White North. The CP140 departed on the 19th, and 3 hours into the flight we had an engine oil pump actuator valve go and diverted to Iqaluit for repairs. A second Aurora brought us the part that night and by morning we were ready to fly our first mission for Ruth. Unfortunately, the weather was socked in at Eureka and the ice camp, so the mission was scrubbed for the day. We decided to reposition the plane to Thule (as originally planned), and on route a CRT screen decided to burn out and fill the crew cabin with that lovely smell of electronics gone wrong!! An emergency was declared (at the time we had no idea what was burning up), and being in the North only one option for an airport an hour and half away (Thule). We had an Aussie Crew commander (exchange officer) who with the oxygen mask on turned into "DARTHVADER" with an Australian accent. Quite funny to hear and lighten up a very serious situation. Nothing like

making a grand entrance with Fire trucks and the whole works! The maintenance techs we brought with us found the problem, isolated the equipment and wiring that night.



Rough ice makes it hard for the Icepicks to stick.

Our first mission was flown on Monday 21st and was a success. We experienced a number of first day trials issues – in particular getting the Icepicks to work in the first 10 miles of ice (muli-year ice, heavily ridged and lots of snow). Lots of newly re-frozen leads (perfect for icepicks) but was too thin and they punched straight through.

The crew had been flying 4 days in a row so we took a day off to rest. Fortunately Eureka and the Ice camp was socked in by weather, so perfect timing for all.

Our second mission was on the 23rd. After trying to get some more Icepicks to work in the same 10 mile stretch of ice we moved on and had a 90% serviceability. The ice out further was less ridged. We had enough hardware to do a third flight but unfortunately we mis-communicated, and the blasters fired off all of the remaining shots!! We have some good video of the Icepicks leaving the aircraft, in flight and spiking into the ice. We also did a couple of low level (500') fly over the Ice camp. Looked like gophers coming out of their holes to see what was going on!! Some good pictures of the camp.

Gophers popping up at Icecamp.

The aircraft was a Block II update, and they had to certify the nav systems for the North pole, and that mission was completed on Thursday. It was real interesting to watch the magnetic compass needle in the cockpit get pinned at East then West and finally spin in circles. Great fun.

Thule has down sized, and the Danes are taking over more and more things. They also change their hours when things are open on a whim!! A very hard place to get a connection to the outside world. Since Boxtop was on, I hopped over to Alert for a quick visit with Jim and Al on the 22nd. All was well there the usual change of CO's and SWO's putting their individual touch on the base and how it should run.

Loved your news letters. They were very helpful in keeping me in touch of how Ruth was making out. Would have loved to be back on the ice working with you. Maybe some time in the near future so much I can learn from you.

Cheers, Don

A supplement from Don:

A quick history of Thule (76^0 32N 68^0 42W): Thule is the US Airforce's most northern air base and is run by the Danes. It was secretly built in 1951 ("Operation Blue Jay") to monitor the old Soviet Block. It became a ballistic missile warning base in the early 60's. Today its main function is to monitor space and track all of the debris polluting the outermost atmosphere. The base is also used to support activities such as the re-supply of CFS Alert, which is 360 nautical miles north of Thule. Twice-a-year, in April and September, the Canadian forces use a C130 Hercules aircraft to bring in fuel and bulk freight from Thule. These are called "Operation BoxTop".

In previous Newsletters we saw the Rangers conduct their mission around the Northern part of Ellesmere Island. Did you wonder how all of their equipment was shipped in and out of the North? Wonder no more. The carry-all is the Canadian Airforce's largest transport plane – called a C17 Global master. One flew into Thule on the 25th to take all of the Rangers gear south. The C17 can carry at least 2-3 times the cargo that the C130 Hercules aircraft.

The C17 in the background. The four jet engines, the high tail and the drooping wings are give-aways.

A couple of DND news releases on the mission:
http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=2627
http://www.forces.gc.ca/site/newsroom/view_news_e.asp?id=2626