

Project Cornerstone

Newsletter #10:

1 April, 2009 (Wednesday)

As I mentioned yesterday, Garry has finished his work on the Short-Range Localization System (SRL). They have decided to pack up their camp and do their other experiment at the AUV camp, which is much closer to Alert. Garry says that there is enough deep water around the camp to make his test of the Long-Range Acoustic Bearing System possible. Part of the reason for this move is the shortage of gasoline; we just don't have

Erratum: Newsletter #9 quoted the latitude of Eureka as 82° north. It is, in fact, 80° north. This was a typographical error, and no slight nor slur was intended to the good people of Eureka.



enough fuel to ride the many skidoos back and forth to the more distant camp. The above picture shows most – but not all – of the operating skidoos.

But, of course, it does not show any of the skidoos that are laid-up waiting for attention from the next available mechanic. I understand that Dan Wile and some helpers will be coming up to Alert in October.

One of their jobs will be to repair all the poor hulks. Dan is following our adventures from Halifax, and he is sad but philosophical when he says, 'March is hard on snowmobiles in Alert'.

The temperature remains rather warm – somewhere between minus 20 and minus 25. However, the wind has picked up a little – not enough to lift any snow, but enough to make working outside a bit unpleasant. The camp flag (above) had been hanging limp for the whole previous week.



The cold can be very annoying to people who wear glasses. When Ron Lewis (left) walks into the relatively humid tent, his glasses frost over immediately. (Instant cataracts!) However, he keeps on smiling.



The picture below shows another problem caused by the cold. If humid air (this time from a small air compressor) is run through a cold line, the humidity turns to ice, and eventually this ice plugs the line. Here, Peter is doing a Dizzy Gillespie impersonation trying to see whether the line is clear yet. Darrell is inspecting the inner tube that they use as variable ballast for the AUV. The MUN people emphasize that this make-shift arrangement is strictly for these stationary tests. The rest of us thought it was quite clever. However, next time I suspect they will hang their hose higher (where it's warmer).



Yesterday Val Shepeta and Warren Connors came over to the AUV camp and measured noise in the water. There is a concern that the AUV will make noises that will interfere with Garry's acoustic positioning and his long-range beacon. So, they put a hydrophone in the water and measured the noises the AUV gives off when the control planes are moved and when the propeller motor is run at different speeds. Their intentions were honourable, and they worked hard in a crowded tent, but ultimately they were defeated by hardware problems; in particular, one of their filters misbehaved. They plan to redo these measurements.



Today they moved into the octagon at the AUV site. Here are Val, Warren, Nicos and Garry setting up the electronics for their 'Long-Range Acoustic Bearing' tests.

One way of locating the vehicle under the ice once Garry's acoustics systems have located it roughly is to use an avalanche beacon – those radio devices that skiers carry when they are afraid that they might get caught by an avalanche. Alex Forrest, on the left, is holding one such.

Today we tested it with the transmitter in a waterproof plastic box (a Pelican case) pushed under the ice. It will also be tested with the transmitter in the main aluminum pressure pot. Most of us think that it would work much better out of the (conductive) pot. However, it is much easier to install in this pressure container than it would be to expose it to the pressures of 5000 m of water. So, the first thing was to see if it was appreciably better out of the pot than in. (The jury is still out.)

Another important test that was begun today – late this afternoon actually – was the test of the Inertial Navigation System.

It contains a fibre-optic gyrocompass that can automatically align itself to north. The model is called PHINS. It is made by IXSEA, and today Alban Bouchard, a support engineer from IXSEA arrived from France to assist with the testing. When the testing here is finished they plan to test it as far north as possible, which in practice means the Hydrographic Survey camp at about 85 degrees.

This afternoon PHINS was installed in the pressure pot in the AUV, and this evening the 21-hour test begins. The vehicle, suspended in the water from CATCHY, will be rotated 90 degrees every four hours. Three people will look after it all night and tend to the rotations. I hope they have good alarm clocks.

Today Canada celebrates the 85th anniversary of its air force. At supper the Commanding Officer of CFB Alert, Major Scott Murphy (right) made a short speech laying out the principal dates in the Air Force's history. He then thanked the kitchen staff for coming up with a very nice birthday cake.



The picture on the right is another for the rogues gallery. This is Al Tremblay in the Spinnaker-building workshop. Al, together with Jim Milne and Dave Wheaton, looks after the logistics. They make sure that the camps are established, that they are kept refuelled, that skidoos are kept in reasonable repair, that everything we need is available, etc., etc. Al, Dave



and Jim are the people we go to when we need something but we have no idea where to find it. Theirs is sort-of a background job; it doesn't hit the front page, but we would be utterly lost without them. Thank you.

And, finally, the names that people have suggested for the two vehicles. I'll list the ideas and the reasons, when given, but I won't name the people. As you can see, several people came up with multiple suggestions.

Electra and **Calypso** are both Oceanids.

Aurora & Polaris
Nanuq & Tuktu
Ciruiq & Manirak

Laurel and Hardy.

Prometheus is a Titan known for his wily intelligence, who stole fire from Zeus and gave it to mortals and **Daedalus** meaning "cunning worker", was a most skillful craftsman, so skillful that he was said to have invented images that seemed to move about.

Wallace and Grommit
Stan and Ollie
Alert and Discovery
Swans and Gingers
Nansen and Amundsen
Nares and Markham
Peary and Henson
Nunavut and Allavut
Left and Right

Wallace and Gromit
Red and October

Best Wishes, Ron Verrall

We'd like to hear from you. (ronverrall@gmail.com)

Tweedledum and Tweedledee
Romeo y Julieta
George and Gracie

Bob and Weave
Duck and Dive
How about Knob and Tube
Baby and Bathwater
Sink and Swim
Fred and Ginger

I'd suggest Latitude and Longitude but it's too easy to get them mixed up.

Franklin and M'Clure after Sir John Franklin and Sir Robert McClure

Henrietta and Adolphus

Adolphus is for Adolphus Greely (nick named Dolph) leader of the ill-fated expedition that camped not too far south of you at Fort Conger. Henrietta Nesmith was Greely's wife and there's a glacier named after her on Lake Hazen

So far, my personal favourite is

Hugin & Munin - the two ravens that fly out and gather information (and gossip) for Odin - the Nordic "boss god"