

Arctic Patrol 2007

Aboard CCGS Sir Wilfrid Laurier

Daily Journal

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TWO MONTHS REMAINING

VICTORIA, BRITISH COLUMBIA, CANADA
10 JUNE 2007

One year of planning comes down to these last two months scurrying to tie up loose ends. There are northern assignments to schedule, sponsors to confirm, supplies to acquire, and a trajectory to plot that lands me in Kugluktuk in time to meet my floating home and office on August 8th.

This Arctic landing should be softer than my last. That arrival - 36 years ago - involved a low-flying Hercules transport aircraft and a tiny green light. After an interminable flight from "down south", we approached Resolute as our aircraft splayed open its tail to reveal a line of nav lights from the Hercs astern. When the red get-ready light flickered to green, I joined my white-clad paratrooper colleagues chasing overloaded toboggans and skidoos off the gaping

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ramp, falling and floating through the frigid darkness of an Arctic winter day. Once on the ground, tents were our home, and -30° was considered warm in a blustery environment that gave new meaning to the term windchill.

This time, my venture north is by comfortable means and my accommodations - by comparison - luxurious. My purpose is different, too. For three months I'm going to chronicle the work of Coast Guard and science crews over the vastness of Canada's western Arctic. I'm going because I love the stark beauty that exists in few other places on the planet. I'm going because I admire the rugged independence of the people and wildlife whose daily life is one which most folks in the lower latitudes don't know about, would not tolerate, nor likely survive.

I'm going, also, to see firsthand what there has changed since my youth, to try to learn why, and to tell you about it. For someone my age it isn't a question of, is climate change real – the most hardened cynic need only ask anyone over age 50 what's different now than in their "good old days". Even if the sky isn't falling as calamitously as some warn, it is behaving differently.

My thanks and heartfelt appreciation goes to the many organizations that are kindly assisting my Arctic project, and to the numerous publications that believe their readers will be interested in my northern observations.

LEFT BEHIND

VICTORIA, BRITISH COLUMBIA, CANADA

JULY 13, 2007

I'm anxious. My socks and underwear will arrive in the Arctic without me. For the past ten days most of my worldly possessions have been steaming away from Victoria at around 11 knots - secure in the hold of CCGS Sir Wilfrid Laurier. Not that I'm worried about their well-being - no reason to be, since my kit is stored very close to some important, well-guarded equipment – the ship's ice cream freezer. Nevertheless, I'm anxious, and in a conundrum of sorts. Too long to wait until I soar to Kugluktuk to claim my skivvies, but not enough time it seems to tie up those pesky loose ends.

There's good reason for wanting to get "up there" soon. The Arctic bandwagon is getting crowded – what with scientific studies, funding announcements, photo ops, and folks like me clamoring to get aboard anything that will float north.

And, the temperature is rising. Last night around midnight, Resolute was sunny (which it's supposed to be), but nearly as warm as here. The mayor of Tuktoyaktuk fears losing thawing shoreline to rolling waves that some think could inundate the town. And the ice – all that precious ice – is either disappearing or behaving very differently than it once did. How's this for apparent contradiction – an open-water Arctic is looking like a real possibility, but an ice-

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free Northwest Passage is considered by many to be unlikely – both for the same climate change reasons.

There will be no shortage of northern subjects to discuss and write about for a growing list of publications that want to hear from me (thank-you, thank-you). I just hope my undies are there, and that the ice cream freezer isn't empty.

IT TAKES A VILLAGE

VICTORIA, BRITISH COLUMBIA, CANADA

August 06, 2007

The title of that Clinton book is more accurate than the author's credibility might otherwise suggest. In the case of this idiot, my village is international in scope and supportive beyond what I might deserve.

As with any deployment, be it military or corporate, the back-scenes support is usually far more extensive than is the visible phalanx going forth. So it is even with my meager expedition to the Arctic, without which I'd be left desk-bound, here, wistfully staring at maps of faraway places.

With only one sleep remaining before my departure – yes, there are actually two nights to go but I doubt I'll be sleeping much the night before my odyssey starts – I really owe this opportunity to much more than just my ingenuity and perseverance.

To help defray the \$30,000 cost of my adventure, the Canada Council for the Arts gave me a modest monetary grant, and another 20 organizations generously and variously donated equipment and services – which greatly lessened the impact on my bank account (and, no doubt on my bank manager). Logos of my benefactors are appreciatively displayed on my website.

Beyond mere dollars (not to diminish the importance of funds), two people supported my endeavour in ways more valuable than currency and nearly impossible to quantify.

Mona Ferguson, my spouse, not only encouraged me to go on this expedition, but even signed my permission slip. Throughout my year of planning, approval processes, fundraising - and sometimes wondering if I'd pull it off – Mona never (outwardly) wavered in her enthusiasm and support for what I wanted to accomplish. Perhaps she's looking forward to a respite from my frequent snoring and occasional rants (or vice versa) - nevertheless, her willingness to shoulder all the home front responsibilities makes my three-month adventure possible. And, Mona's belief in my ability to accomplish the work is both comforting and empowering.

Jason Manchester, my son, came home from a 16-month trek across parts of the Southern Hemisphere (www.jasonmanchesterphotography.ca) to discover that the price of surfing our

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sofa, while he re-oriented to driving on the right, was his becoming my IT department and webmaster. Not only did he design and build my new website from the vaguest of my ideas, he also helped me seriously upgrade my computer capabilities into the 21st century. I'm no Luddite, but there are aspects of the '80s (and earlier!) that I still like. But, much more than cyber stuff, Jason's presence rejuvenated the adventurousness of my soul just a time when I needed it most.

To everyone in my village – those close to its hearth, and those farther away – I send my heartfelt appreciation and thanks for their part in turning my Arctic dream into a reality.

FINALLY...

ABOARD CCGS SIR WILFRID LAURIER

KUGLUKTUK, NUNAVUT TERRITORY

08 August 2007

At last, feet wet in the Arctic. What began as an idea more than a year ago, culminated today with the reality of me scrambling from a small helicopter onto the deck of CCGS Sir Wilfrid Laurier, as it lay anchored off the tiny hamlet of Kugluktuk. For those of you keeping score at home with older maps, this is the community formerly known as Coppermine.

Getting to Laurier was a five-hour journey, crossing a time zone into a foreign world of stark landscapes populated by Canadians who look nothing like the people of the southern latitudes. They are short, weathered-looking folks who are slow in speech, but quick in smiles.

My Arctic adventure began long before we crossed the Circle. A 0430 alarm ended an abbreviated night's restless snooze, which was followed by a taxi ride to the Canadian Coast Guard base at Shoal Point, in Victoria, British Columbia. The gathering crew exchanged greetings with colleagues not seen during their six-week layover, then marched penguin-style past a freight scale to weigh their kit. Most, including me, tipped the scale above the 40lb weight limit for the flight. From there, a crew bus took us to the airport for our charter flight north.

We flew from Victoria on a 50-year old, two-engine Convair 580 turbo-prop aircraft (not a jet). The first several rows of seats were removed so we could carry extra food supplies for the ship. We had cases of all kinds of stuff, including fresh produce, stacked up and held in place by cargo nets. The aircraft's interior smelled like a farmers' market.

We flew three hours from Victoria to Yellowknife, where we stopped to refuel. When we embarked on the 1 1/2 hour flight from Yellowknife to Kugluktuk, the dozing passengers got a rude awakening about 20 minutes north out of Yellowknife. The aircraft suddenly depressurized with a loud whoosh, whistle and plenty of ear-popping. The pilot said there was no indication as to why it happened, but since he couldn't re-pressurize the aircraft we descended and continued the flight at a lower altitude.

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On approach to Kugluktuk, the ceiling was very low, and the visibility so poor that we didn't see the ground until about the same time as the flaps were extending and the landing gear was lowering. At Kugluktuk, the wind was blowing 25 knots, and the driving rain felt like slush against our faces. The ship's helicopter shuttled incoming and outgoing crew - four at a time - between the airport and ship, then slung all the supplies and baggage over in cargo nets hanging below the machine.

I have my own cabin toward the aft end of the ship, on the upper deck - three levels below the bridge & right under the helicopter hangar and part of the flight deck, so I sometimes feel the helicopter land. I have a double cabin (with bunk beds). There are no scientists onboard right now, so I have the cabin all to myself, but I might have to share for awhile when the science crews arrive. Good news - got my own private head & shower! Even better news - all my kit was here. Bad news - the ice cream freezer suffered the worst kind of meltdown before we arrived.

GOING PLACES

ABOARD CCGS SIR WILFRID LAURIER

CAMBRIDGE BAY, VICTORIA ISLAND, NUNAVUT TERRITORY

69°02' North Latitude. 105°10' West Longitude

13 August 2007

Laurier got a crew change last Wednesday, but not a change of pace. Some of the ship's business was handed-off at the airport, between those who just arrived and those who held a keen interest in getting on the aircraft that we just vacated. Once aboard Laurier, the new crew took little time to get squared away before making plans and laying courses to continue the ship's time-sensitive patrol.

THURSDAY, AUGUST 9TH, 2007

Overnight, winds increased to 30 knots, and we had 4' swells scouring past us at anchor, which only gently affected Laurier. We weighed anchor and departed Kugluktuk in the beginnings of a Gale. Soon after, we were being pummeled by 35-knot NW wind, and 6' swells with frothy whitecaps frequently streaming off their tops. The temperature was a see-your-breath kind of chilly at +3°C, but the windchill was well below zero. For most of the morning, the wind and swells sent huge sheets of spray over the ship as we rolled - and sometimes pounded - east in the Coronation Gulf.

Some awesome and soggy photo ops came while I wedged under the gunwale on the foredeck, with swells and spray going clean over the ship from one side to the other. A couple of big ones nearly knocked me down as I crossed back across the open well deck. We were in only 100-metre water depth, where the sea can build up big & quick in a wind. No ice in our immediate vicinity - maybe some where we go next week.

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Later in the day we changed course, as did the wind/sea, and things smoothed out as we often surfed along on 6' - 8' swells, setting up a rhythmical creak and groan through the ship. The timing of this calming influence was fortuitous. Shortly after lunch it was time for what the old salts call, "sports day" – that's when the ship's emergency bells ring, we all muster, and then don life-sustaining immersion suits in an abandon-ship drill. Even with practice, wrestling into those suits with the built-in booties makes one hope that emergencies will be announced well in advance.

FRIDAY, AUGUST 10TH, 2007

We steamed at 11 knots all through the night, and by morning were near Cambridge Bay (southeast corner of Victoria Island). There was some amount of daylight all night, but the heavy overcast made it look more like late-evening twilight. Laurier is such a big, heavy ship that I didn't feel much movement as I slept while underway.

The morning's wind was lighter, but we had fog right down to the deck, and gentle two-foot swells. The ship's fog signal serenaded us for awhile. By 0800hrs the murk thinned enough for the helicopter to launch a crew to begin whittling away at its lengthy to-do list - countless beacons to repair. Their work, to eradicate the ravages of a harsh year of Arctic service, took most of the day while we continued cruising slowly toward Cambridge Bay.

I went flying with a repair crew. The tiny, five-passenger helicopter (a Eurocopter BO105) deposited us on a low-lying, featureless gravel island that sticks up just above sea-level (typical of the land here) to re-paint a navigation beacon. The official name of the island is Unnamed Island, which is kind of ironic when you think about it. There were lots of birds - Arctic Terns and Plovers – hovering above our heads. They kept a close watch on our every move – sometimes from just out of arms-reach. There were lots of small flowers clumped all over the island, growing barely out of the gravel - and lichen on some rocks. The rocks had spectacular grain and patterns. An untold story lay in the form of a derelict 14' aluminum boat that was washed up on, and partially in, the stony beach.

We saw the only other vessels thus far on our trip - a tug with two barges bound for Cambridge Bay, and a 25' catamaran sailboat also headed there. Except for us, there are no conversations on the VHF radio channels.

We anchored out in Coronation Gulf, instead of going all the way to Cambridge Bay, because we still had repairs to make to more nav beacons in this immediate area. With barely a two-foot tidal range, compared to our home range of 10+ feet, there was little concern about having enough overnight water under our keel.

SATURDAY, AUGUST 11TH, 2007

We moved right in to Cambridge Bay, on Victoria Island, and anchored in front of the townsite, which is home to some 1,500 people. The bay there is very shallow, and our draft

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is 18'. The temperature warmed up to about +8°C for awhile in a fairly sunny day, although the +3°C water temperature reminded us that we weren't in BC anymore. Later, rain squalls blew through and the wind seldom dropped below 20 knots.

Cambridge Bay has a large DEW Line site (Distant Early Warning, radar and radio sites built in the 1950s, to listen to the Russians, and warn of any airborne attacks from them) This site still operates, and looks eerie and sinister with its big radar dome and outbuildings. Reportedly, it and the one at Hall Beach are the only ones still staffed. I'm told that many DEW Line sites are still "live" although they aren't manned – they have sensors and cameras feeding a central server - and the techs know when to fly up for repairs because of the telemetry being transmitted.

Crews flew off to more remote sites doing maintenance on the nav beacons that dot the passages winding their way through the gravel spits and islets. Since the navigation season here is mainly July and August, when it's mostly daylight 24 hrs/day, the beacons don't need to be lighted.

The beacons are mainly tepee-shaped metal towers with rows of wooden slats running horizontally up the three-sided towers - held in place with guy wires anchored into the gravel. The elements are so harsh that the wood needs to be repainted annually. The crews pack paint, rollers and other toolboxes into the helicopter and fly sometimes 35 kilometres to a worksite – often far enough away that they cannot see the ship.

I did an interview for The Weather Network, which is planned to be done every Saturday while I'm on the ship. The interview is supposed to run every Sunday on the full national network, between 3PM and 7PM EDT, at either 12 minutes or 42 minutes after each hour.

SUNDAY, AUGUST 12TH, 2007

The ship ran a liberty boat (twin-engine, fast-response, 25' Rigid Hull Inflatable), shuttling off-watch crew ashore for a wander around Cambridge Bay hamlet. I went in and interviewed an RCMP sergeant, and the manager of the only store in town. The Inuit people I met are very friendly and helpful toward strangers, just as I recalled from 36 years ago. There are also a lot of white people here, working for governments and other services.

Unfortunately, according to the five-person RCMP detachment, all the problems of the big city are here, too. Their jails are full, as are the court dockets. Teenage suicide is a huge mental health issue in the far north – some small places having 10 in a year. Major causes are depression about loss of relationships, lack of work and no hope for their future in such isolated, remote places. And, the anniversary of a loved-ones' suicide often triggers another tragic death in someone who still grieves that earlier loss.

The traditional lifestyle used to keep everyone very busy just getting on with the business of daily life, but now that pop, drugs and iPods are here, that way of life is forever ruined.

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According to some health professionals, adding to the isolation is the fact that persons from one community who relocate to another one are never accepted as real members of the new community. They are always the people from that other place, so if they suffer a life crisis they have absolutely no support mechanism to help them. That issue results in many adult suicides each year.

The store, which employs 25 people, gets its supply of non-perishable goods only once per year. A tug hauls several barges containing 30 shipping containers, the same ones you see on trains, trucks and ships. They get their perishables (like milk, fruit, and vegetables) by aircraft, flying in 10,000lbs twice every week. The people who live here don't have the huge selection of things to buy that we do, and the prices are very, very high compared to what we pay for things in the south.

Lots of people here drive ATVs instead of cars and trucks (but there are lots of trucks here, too), and it's odd to see the ATVs roaring around town or parked in front of the grocery store.

There are many cabins strung out along the shore, and even along the way getting here. The cabins we see in many areas along the shores are real homes for some people who prefer to live out on the land, while some are "summer" dwellings for folks who usually live in the settlements. But, I'm told, some exist just to generate income for opportunistic people who take advantage of a government program that pays grant money to people to live out on the land (theoretically perpetuating traditional lifestyles), so some of the cabins are there more for the money than anything else.

A school teacher from Victoria is travelling with us, looking to connect with northern educators. She met several Inuit people here in their 60s and 70s who never went to school, and have lived their whole life out on the land.

MONDAY, AUGUST 13TH, 2007

We are still anchored at Cambridge Bay. At breakfast time, thick fog shrouded the ship, right down to the deck – and we could barely see 100 metres away. It eventually thinned, which was good news since there is still lots of flying to do in this area, in order to maintain all the nav beacons (there are hundreds up here).

My first few days onboard have been a whirlwind of activity - up at 0600, breakfast at 0630, then work from 0700 to after midnight. It still is light 24 hours/day, but between midnight and 0300 it is more like twilight, and getting darker by the night. We should see our first actual full sunset quite soon, with real darkness overnight - then by October it will be more dark than light all the time.

Thus far, the two most noticeable features of the weather here (in August, in summer) are wind, which has been steadily blowing at 20-30 knots since we arrived, and temperature

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(usually around +3°C, but the windchill is below zero). Parkas and toques are my cruisewear mainstays.

Presently, the nearest ice is 150 kms from us, but the skipper says we should see some after we leave here - and he says we should see plenty of it getting out in October, along with polar bears as we move west from here. The helicopter carries a shotgun as bear repellent, which they are happy to report it never yet had to be used. But, the work crews are vulnerable because they're working in pairs, spread out miles apart and miles from the ship. Last Thursday they encountered a pair of Musk Ox, which posed no threat.

Laurier hosted lunch onboard for a group of Cambridge Bay healthcare workers, who are still reeling from the recent loss by fire of their new hospital. But, spirits and hopes are high in anticipation of soon being into a new facility.

We met Sebastian and Eric, the two-person crew of the small sailboat that overtook us at anchor the other night. These adventurers from France are in the third month of their attempt to sail from Alaska to Greenland, via the Northwest Passage, all in one season. Babouche, their engineless, 25' catamaran features an extremely shallow draft and the capability to go up onto the ice, departs tomorrow – expecting to make Greenland by the end of September.

By 1430 the anchor was retrieved, and our ship got underway toward Queen Maud Gulf to continue its never-ending campaign against the ravages of far-north winters. So far, tonight's voyage is under benign conditions – winds calmer and seas smoother, albeit framed by all-too-familiar fog. After impatiently tugging against its anchor rode for two days, Laurier quickly regained her natural rhythm when we reached open water.

After a stretch of clearing skies illuminated our 12-knot ride, Laurier slowed to a long crawl over a 50-mile expanse of uncharted waters. The bridge crew's continuous and diligent observations broke their monotony of transiting a bland seascape at barely four knots. Watching the late-evening sun pierce the gigantic cloud banks disappearing astern, it was difficult to imagine that such benevolence would, scant months hence, morph into a hostile, life-threatening force.

I HAVEN'T THE FOGGIEST IDEA...

ABOARD CCGS SIR WILFRID LAURIER

TUESDAY, AUGUST 14, 2007

MULROAK ISLANDS, QUEEN MAUD GULF to JENNY LIND ISLAND, QUEEN MAUD GULF

Yesterday, we left Cambridge Bay (Victoria Island) and steamed all night into Queen Maud Gulf. Soon after breakfast, the pipe, "Flight deck crew to the flight deck", heralded our approach to Mulroak Islands. Pilot and work crews donned fluorescent, insulated coveralls and prepared the machine and their supplies for a long day labouring ashore. By the time all was ready for launch, the wind was steady at a familiar 20 knots, the fog thinned to reveal

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five-mile visibility, and the flight deck was gently heaving on a 4' swell. Prior to take-off, the ship turned into the wind, then held course with the wind blowing at a slight angle across the flight deck – to help compensate for the machine's propensity to move slightly forward as it lifts off the deck.

As soon as the helicopter cleared the ship, we moved in to anchor about three miles from Mulroak Islands. We were right out in the open, and the moderate north wind churned up 4' swells that caused the ship to heave, roll and groan at the end of its anchor chain.

This site required such extensive repairs that the helicopter had to make an extra trip just to sling over building materials. The shore party put in a long, arduous day and didn't return to Laurier until after 1800 – tired and hungry. Once aboard, one particularly chilled member of the work detail took such a long and hot shower that it triggered the heat sensor and alarm in her cabin – such that the ship's firefighting team was about to suit up for action.

By 2030 we were underway for our next job, at Jenny Lind Island – still in Queen Maud Gulf. Because we are operating in generally uncharted waters, Laurier headed north at just four knots. During the first few hours of the transit, 20-knot winds blew up 6' swells that the ship bucked, rocked and rolled over – sometimes through. Later, the ride smoothed somewhat, thanks to a course change that headed us more into instead of across the swells' path.

By 2200, the sun settled behind a broad expanse of clouds. Unlike in southern latitudes, here the evening sun was illuminating the sky in the north, northwest. Much later, past midnight, the light came from over the horizon almost due north from us. In this season, the time between sunset and sunrise is barely two hours.

Our trip to Jenny Lind Island took all night. For a time the seas built to 8', which caused a few things on deck to move around - affording everyone trying to sleep on the port side the opportunity to play Guess That Sound.

WEDNESDAY, AUGUST 15, 2007

JENNY LIND ISLAND, QUEEN MAUDE GULF to AMUNDSEN ISLAND, REQUISITE CHANNEL

The uneventful, four-knot crossing to Jenny Lind Island was briefly even more sedate as we stopped at 0500 to drift. This was a planned respite, to enable the ship to arrive and anchor just before the shore parties would be awake, fed and ready for more toil on the spits. Shortly after 0700, the call to the flight deck was soon followed by the sound of turbines whining, and whirling blades upwardly clawing the +2°C air.

The new day went into high gear with an ambitious to-do list, amidst brisk 25-knot winds. An aviation fuel cache needed to be re-supplied and its empty barrels collected. An entire spare navigation beacon was slung over to the island, to be left for next year's use. And, there was maintenance to do on existing structures at several sites on Jenny Lind. The plan was short-

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lived. Fog put an early end to the day's endeavour, and there was no hope that it would soon clear at this location.

By 1030 we were underway for a new, hopefully fog-free destination. Twenty-five knot winds, and swells the height of an NBA-tall man (or two even taller children), made it a hard slog. Laurier climbed up and over the swells at balance-disrupting angles, which encouraged firm grips on the handrails when navigating the vessel's hallways and stairs. Pitching and rolling induced creaks and groans to emanate from ceiling panels and other surprising places. Thanks to a later course change, the multi-directional motion became a more predictable rhythm as we then ran with the rolling seas, pushed from behind by 30-knot wind.

Looking down from the bridge, 50' above the sea, swells look smaller than they are. In reality, 8' swells pose no challenge for Laurier, but from down on deck, close to the rail where I braced to shoot photos, the size of the liquid hills and their brute force against the hull was vividly seen and felt. Most of the time, the ship repelled on-coming swells into a thunderous maelstrom that arched far up and away from the hull. But, if Laurier stuck her nose in and heeled just right, the wave would rise above the gunwale, where the wind would shred its upper half before sending the whole frothy swirl across the open well deck. Talk about more fun than you could possibly have without actually losing limbs, or your toque!

On our way to Amundsen Island it looked like they were right about the world being flat - and we were approaching its edge. Our electronic chart reached the end of its known data for the area, and to the right of a black line there was only blank, white screen. Fortunately, the paper charts have more detail, although there is a dearth of depth soundings. Consequently, much of the time we were moving at just four knots instead of the usual 12. All eyes were on the depth sounder, which displays the bottom as a horizontal line - so you can see if it's trending to meet the keel. Occasionally, bumps and pinnacles appear, but mostly the sea floor here is flat, its generally muddy bottom being good for anchoring.

By 1430 we were anchored up near Amundsen Island, hoping for flying stations - only to be tantalized by dense fog that alternately smothered the ship, then thinned to nearly launch conditions. While the balance of the day's off-ship work was cancelled, on-watch crew turned to their endless list of chores within the length and breadth of Laurier.

The ship isn't only about work - mostly it is - but opportunities exist to work it out in the ship's min-gym, or to soak in the crew-purchased hot tub (with the million dollar sea view). Lunchtime dessert includes a brief bingo game for spiffy prizes, played at times with such enthusiasm it could easily morph into a blood sport. In addition, I don't know what sharks may lurk beneath the sea, but there are a few of the card variety onboard.

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LOST AND FOUND

ABOARD CCGS SIR WILFRID LAURIER
AMUNDSEN ISLAND, REQUISITE CHANNEL
68° 20' N. Latitude. 100° 36' W. Longitude.
THURSDAY, AUGUST 16, 2007

We remain anchored off Amundsen Island, gently rising and falling on a 2' swell. The chart shows extensive reefs that nearly surround the island, which look all the more menacing because there are very few depth soundings recorded near or within their jagged circumference.

The morning temperature was +1°C, with a 15-knot wind. This is the lowest temperature, and slowest wind, we've had since arriving in the Arctic on August 8th. Our hottest day of this patrol was August 14th, when the mercury (or our electronic gizmos) briefly spiked to +10°C - which didn't last long.

Fog plays havoc with the work schedule, since the helicopter needs about two-mile visibility. Mostly the fog has been right down to the deck, but every so often a clear channel opens up because of how the wind blows the fog banks around. So, what looks good enough to launch in can just as quickly sock in again. Our 100-metre visibility cleared to over five miles, although the ceiling was still only about 1,000 feet – but enough encouragement for our helicopter to quickly load and launch.

Without the helicopter most of the work can't happen. It's impractical to try getting the crews and equipment ashore by small boat. The water is so shallow, and the bottom gradient away from the islands is so gradual, that you'd have to get out of the boat and wade in from a long distance out – which might not be survivable in these conditions, not to mention downright unpleasant. Most of the islands barely show above sea level, are featureless and consist mainly of gravel and rock. Navigating is a real challenge without landmarks. We are anchored several miles off the island, but in only 60' of water. We've mostly been transiting waters that are only about 150' deep - and we're "at sea".

As the day wore on our anchorage became calmer, while the pace quickened for the repair crews ashore – lots to do before the next gauzy bank stopped the work. But, they caught a break, and were able to keep hard at it, even getting to sites on nearby, unnamed islands that are part of a larger collection known as the Nordenskiöld Islands. At around 1945 the helicopter put its last thud of the day on the deck above my cabin, which ended the shore party's prolonged foray.

As the evening temperature rose a couple of degrees, the fog reinstated its sky-to-sea shroud around Laurier – effectively blocking all view of our nighttime sunlight. So far we haven't seen any trace of Franklin's ill-fated expedition of yesteryear, but, on Amundsen Island Mike Hawley did find the knife he dropped there during last year's patrol. Except for the weather, and some wildlife, there isn't much here to disturb things. Begs the

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philosophical question, if a journalist was left behind on one of these remote, gravelly islets, would he make a sound?

MAKE MINE PEPPERONI

ABOARD CCGS SIR WILFRID LAURIER

HAT ISLAND, REQUISITE CHANNEL

68° 16' N. Latitude. 100° 01' W. Longitude

17 August 2007

Friday night is pizza night aboard Laurier. And, it's definitely not delivery. The ship's inhabitants start salivating for their special evening meal long before palates have completely savoured lunch. That's not to denigrate the quantity or quality of daily fare aboard this ship. Whether one's repast comes table-served in the officers' mess, or cafeteria-style in the crew mess, galley gurus Harold and Herb delight and entertain diners of all stripes with their culinary creations and colourful commentaries. But, I digress. Back to those pizzas. There's something wondrous about the sight of seemingly endless overlapping rows of pans spread to their edges with a rising foundation, which wafts the senses like only pizza dough can, heavily laden with – well - everything. Now, that's motivation enough to survive another afternoon. Those pies were greatly appreciated, heartily devoured - and well earned by shore parties that put in more than a full-day's effort.

This day featured extensive repairs and painting on far-flung sites. On this Arctic patrol, good weather is its own punishment; for it stimulates a single-minded drive to do much – very much - while conditions are not impediments to success. Depending on whether you worked in it or observed it, today was probably the nicest day we've had since this crew change. The sea flattened under a ten-knot wind, visibility extended several kilometres, and the +4°C day felt nearly balmy during unexpected and big sunny breaks. When the wind briefly dropped below five knots, it was some kind of wonderful. Like I said, it was its own punishment. Crews flew as far as 15 kilometres from the ship to repair numerous winter-worn navigation beacons, and most didn't return to Laurier until long past suppertime. For one pair of Mr. Fixits, their ride home was a lumpy boat trip straddling their 100 kilograms of tools and supplies.

Amidst all the industry, Laurier quietly weighed anchor and slow-belled from Amundsen Island over to near the southeast corner of Hat Island, to be in a better position for tomorrow's toil. Hat Island, roughly south of much bigger neighbor, King William Island, is site of another DEW Line compound – reportedly unmanned, but which is a surreal night-time vision. In Requisite Channel's hodgepodge of gravel spits and vast aloneness, a single white light shines. It is not a navaid, but the brilliant security light that illuminates Hat Island's DEW Line compound. It seems so entirely unnecessary and out of place here.

Thus far on this leg of Laurier's patrol, our ice observer – affectionately known as the Ice Pick – hasn't had much to monitor. But, there was a gleam in her eye when she reported

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that sea ice might be as close as 60 nautical miles. It's an encounter that many onboard - including her - are looking forward to having.

Laurier's day concluded in the periodic embrace of a now-familiar companion, transient soggy fog that seems to always be on our periphery or on our decks. We haven't seen any other vessels since leaving Cambridge Bay several days ago, but a sailboat may be coming our way in the next while. Since it reportedly is radar-less, it could end up being either some company, entertainment or a bit of search and rescue work to spice our routines.

YOU OUGHTA BE ASHAMED

ABOARD CCGS SIR WILFRID LAURIER

HAT ISLAND, REQUISITE CHANNEL

68° 16' N. Latitude. 100° 01' W. Longitude

18 August 2007

Perhaps drawn and quartered, too. And I don't mean figuratively. I'm not referring to you, you – but rather that other you – the you who gave the order to abandon that tracked vehicle to the Arctic's perpetual ravages. I'm no expert, but I'm thinking that it wasn't all that good for the neighborhood, either.

Tracked, and looking a tad military-ish, it's the kind of contraption that enthusiasts love to restore, and museums proudly display - instead, there it sat on petite and remote Tiller Island. Facing seaward and stopped just short of the water's edge, it looked as if it balked at the invitation – having outlived someone's need - to gallantly amble into oblivion beneath the ice or waves. Its lowered aft loading ramp suggests that someone just walked away from it, content that it and its surroundings deserved no further thought.

Maybe the person who followed that don't-worry-who-will-know order should also get a dishonorable mention, or be dispatched with a blunt object – such as the brain of the authorities who condoned such reprehensible disposals. Yes, disposals – as in plural, as in it frequently happened all across our northern treasure – by public and private sectors, alike. No one ilk of northern exploiters holds the monopoly on shortsighted decisions - I'm sure you know who you are.

Recently, I heard accounts about far-north site clean-ups, where every moveable thing, vehicle or otherwise, met an ignoble end beneath the waves – either driven or pushed down a beach or off the ice's edge. Or, things were just left where they stopped. Spare us the song and dance about it not being practical or affordable to retrieve vehicles, equipment and materials after their life-cycle ends. If it was practical and affordable to bring it up here, then you can surely take it home. If only there was the will to enforce a collective conscience – with penalties so severe that bouts of doing the right thing spontaneously erupt.

Do I seem a tad annoyed at finding that one monument to mankind's stupidity and total disregard for the very planet on which every living thing depends? Yes, I'm rankled. Perhaps

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the offspring of those morons are now the ones who think it a good idea to leave thousands of junk objects orbiting Earth. Good grief, maybe it's genetic to wantonly desecrate where we live – makes me curious about where their biffy is located.

Maybe you can think of people in the right places to write or call. Email is fine, but it's harder to ignore a sack of old-fashioned mail. Then again, who in our attention-deficit existence really cares – there's just so much to care about that often it's simpler to just tune out in front of all those colourful moving pictures. But, it's high time we dropped the oh-so-clever mantra of, "Use it or lose it", and face the reality - abuse it and we're lost. Preachy? Yeah, I guess, but then again, I just saw a rusting hulk with our ramp down.

A GOOD RHIBBING

ABOARD CCGS SIR WILFRID LAURIER

HAT ISLAND, REQUISITE CHANNEL

68° 16' N. Latitude. 100° 01' W. Longitude

18 August 2007

Saturday aboard Laurier does not herald the beginning of a weekend. Every day, life here is a continuation of the one before, but each with its own peculiarities. An Arctic patrol is akin to running a marathon, in this case pacing oneself to go the 42-day distance – albeit at a labour-intensive stride often punctuated by stretches of wind sprints.

When the ship seemingly rests at anchor, its calm repose belies the activity happening everywhere in, on and away from the ship. The duck might look serene on the pond, but there's a whole lotta paddling beneath the surface. Just keeping the ship's business up to date, the food on the table and the machinery humming employs a small cadre that seldom leaves Laurier, some of whom rarely even see the sky. Much of the ship's essential services emanate from below the waterline, deep within the hull. The trade-off for lack of passing scenery is that being so close to the keel usually results in a less-tumultuous ride in heavy weather.

Once the shore parties launched to their low-lying destinations, Laurier repositioned farther along its track of intended projects, ultimately coming to anchor in the middle of Requisite Channel some 30 nautical miles from where we had breakfast. The day gave all the indications that summer still had some spark – negligible breeze, frequently-sunny +3°C morning, on a calm, wrinkled sea. For a time while repositioning, Laurier stretched out to ten knots, a nice change from our previous snail's pace across uncharted waters. Even in such benign conditions, the shore parties go to work with survival packs among their loads of tools and parts. Tales abound of being marooned on a desolate shore for hours – to midnight in one case – waiting for a break in the weather that would bring their ride home.

Just before noon, I went with two of Laurier's bridge officers aboard one of the ship's RHIBs. We blasted off at 30 face-exfoliating knots to confirm the settings of two sets of range markers, which had just been refurbished with brand new towers to replace their former

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construct of barrels and frames. On a seaway of near-endless vistas, it seemed odd to float on barely 20' of water some three miles off the shore of an island. Although the water is deep at the North Pole, we've been cruising in water that is substantially shallower than back home. However, it is a treat to go boating where no submerged logs threaten your hull.

It was a good thing that we went cruising when we did. The fog banks that were practicing flanking maneuvers near us, revealing then smothering not-too-distant shores, later resumed their familiar attachment to Laurier. By mid-evening, shortly after flight ops ended, the real Arctic summer returned on swells propelled by 25-knot winds. The air temperature increased to a soggy +5°C in driving rain. The air and sea temperatures are nearly the same, and the humidity is 99% - so fog is a likely companion for awhile yet.

A VOICE IN THE WILDERNESS

ABOARD CCGS SIR WILFRID LAURIER

UNDERWAY IN REQUISITE CHANNEL, BOUND FOR SIMPSON STRAIT

19 August 2007

The fog signal's braying describes this day. Fog has been a constant companion, but it often kept a respectful, albeit disruptive distance. But now (at 2130), we're steaming through Requisite Channel bound for Simpson Strait, shrouded in a dense grayness that barely eludes Laurier's bow. But, thanks to myriad depth soundings on the chart along our intended route, we're able to maintain a ten-knot speed – mostly.

Periodically, the ship slows as the depth sounder shows the sea floor angling up toward our collective bottom. Usually it's only the fast response RHIBs that are driven with one hand on the wheel and the other on the throttles. But, since prudence dictates slowing Laurier on indications that shallows lay ahead, engine power is often adjusted, sometimes dramatically. On occasion, we even shudder and rumble to a near stop.

We remain in relatively shallow water, presently around 50 metres. And, the bottom is fairly flat, except for one remarkable steep rise that got everyone's attention. The third officer slowed Laurier to a crawl, and we ghosted over the pinnacle with 15 metres of depth to spare.

One crewmember described an Arctic patrol as being like the movie, *Groundhog Day*, where, just as the movie's principal character, you wake each day to relive an exact duplicate of the one before – trapped in extreme Déjà Vu - and then you go home. But, in reality, each of our northern days thus far contained sufficient nuance to make it unique.

Today featured starts and stops – some planned, others imposed. A day's work was crammed into a morning at four sites. When fog grounded the helicopter, it and the shore parties sat stranded for hours only four miles from the ship – until a radar-assisted RHIB could retrieve them. The helicopter looked destined to spend the night on a cold gravel bed at Wilk Island. Except for being lonely, the machine was unlikely to suffer curious-animal

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damage overnight at that locale, although bear and musk ox can be of concern at other places. Fortunately, the fog retreated after supper and the pilot got his second boat ride of the day, to go fetch the machine. Helicopter 362 is again securely tucked into its cocoon-like hangar on Laurier's stern.

Yesterday's weather respite was short-lived. After this morning's breakfast we got underway in 25-knot wind, a condition that is all too familiar during this patrol. The air temperature inched its way upward to be nearly as warm as the sea temperature (+5.9°C), whereas just a few days ago it was barely half that of the water. The trend continued into the evening, until the air was a balmy +7.8°C, now warmer than the sea, which also heated through the day to +6.25°C. Perhaps it's little surprise with all the fog, that we have 100% humidity - or vice versa.

A sudden voice bursting VHF channel 16's long silence announced that we are not alone – at least for the moment in this northern emptiness. The skipper of the American sailboat, Cloud Nine, recognized Laurier as the ship that freed him from the ice in this region two years ago – coincidentally also under command of present skipper, Captain Mark Taylor. The 52' ketch passed close by going in the opposite direction toward Cambridge Bay, making good speed in 20-knot wind under mainsail alone. Its skipper reported little ice on its route, toward where we are now headed, except for one 11-mile sheet farther north in Larsen Sound (above King William Island). We're still a few days, and a long to-do list, away from the possibility of seeing ice.

REMAINS OF THE DAY

ABOARD CCGS SIR WILFRID LAURIER

Eta Island, Simpson Strait.

68° 32' N. Latitude. 97° 25' W. Longitude

Monday, 20 August 2007

The ship was abuzz yesterday. We were able to snag The Weather Network via satellite in time to watch our weekly interview, which was conducted earlier via the ship's satellite phone. The predominantly male crew seemed to like our "weather girl". OK, maybe not all of us are as evolved as Cosmo says we should be, but Michelle is enthusiastic, cute and interested. (Sorry, Michelle – you'll just have to love us as we are!)

The crew is happy (or at least mildly amused) that TWN is taking notice of their work up here. Sometimes lost amid the global warming drum-beating, photo ops and funding announcements that might lead one to believe that somebody just invented it, Laurier has been coming to work in the Arctic year after year, for a long time. Its two alternating crews, for roughly six weeks at a time, work 12-hour days (and often much longer), seven days per week to maintain nav aids and host scientific research. Its work mainly goes unnoticed, except when a high-profile researcher is aboard – or the CBC.

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But, at times like now – during their brief hiatus from having scientists onboard – the crew really does toil in anonymity. Not that they seek notoriety (although I believe that some could be infamous if given half a chance), but now and again everyone needs to feel appreciated. This isn't just a long boat ride for these people. The work – on the ship and ashore – is tough and physically-demanding over a long time. Whether hanging off a 20-foot beacon on a remote gravel spit, or travelling to the worksite by helicopter or small boat, for young and old alike every day is a gruelling, dangerous – potentially lethal – day at the office. It makes it easy to see the value of pizza night, bingo, an occasional beer and the hot tub.

Today was cardboard day, as in collect it from all over the ship, sling the burgeoning mound over to nearby Eta Island, and ignite hefty bonfires to reduce it to biodegradable ash. From the ship, it appeared that an orange-suited nomadic tribe was observing a sacred ritual. All it needed was drumming and a sacrifice to make the surreal scene complete. The event provided an opportunity for many of the usually ship-bound crew to stroll terra firma for awhile, where they could stride farther than 272' in any direction they pleased.

Flight ops were delayed today, waiting for the fog to decide where it was going. Unfortunately, for longer than we cared to sit and visit, the moist murk seemed to prefer our company. Eventually it moved on to smother someplace else, and the whirlybird-borne shore parties achieved lift-off. Meanwhile, Laurier crept into a narrow, chicane-like passage between Trowel and Eta islands in need of a string of navigation buoys.

The buoys used in the Arctic bear little resemblance to the big long-leg ones we're accustomed to seeing closer to home. Those 30-foot tall behemoths, which few ships in the Pacific fleet besides Laurier can handle, are hazardous to ship and crew when hoisted on deck. Their heft in motion can easily destroy railings, as one reportedly did. And, the lightest kiss from a long-leg once rendered the foc'sle door unlockable.

For the short, non-illuminated northern shipping season, a much smaller cylindrical buoy is employed, which is recovered before the ice returns. Weighing around 200lbs, the 8' plastic marker is held in place tethered by a steel cable to a $\frac{3}{4}$ -ton cement block. Deploying the buoy is a carefully choreographed dance involving three deckhands, the boatswain directing a derrick operator seated two decks above it all, and a trio of officers higher up on the bridge whose task it is to place Laurier over a predetermined, unseen spot on the sea floor. Once the buoy was lifted over the gunwale into the water, and secured against the ship, its anchor goes over the side to hover at the surface until everything is ordered set free. Then, it was on to the next position to repeat the cycle of lift, wrestle and release, until all five buoys bobbed and stood against the knot-and-a-half current.

Beacons, buoys, sampling for science, resupply and SAR calls comprise the bulk of Laurier's work – at home and in the Arctic. Laurier is one of the busiest ships of Coast Guard's Pacific fleet – so much so that the 20-year old ship has little time for its own cosmetics. Its work is

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so diverse and its territory so broad that crewmembers have to experience several seasons onboard in order to become familiar and proficient with all she does.

Of the very few other vessels encountered thus far along our vacant route, not all are afloat. A vivid illustration of the Arctic's unforgiving nature is the hulk of a sailboat that lays merged with the beach at Gladman Point, on the outer reach of M'Clintock Bay (King William Island). By contrast, fossilized remains of ancient marine life found at today's worksites remind us that this vast, seemingly hostile part of Canada has supported life for a very long time. If, as our song says, we really do stand on guard for thee, it might continue to do so for a long time yet.

SIGHTED NOTHING, OBSERVED SAME

ABOARD CCGS SIR WILFRID LAURIER

Anchored in Simpson Strait

68° 34' N. Latitude. 97° 40' W. Longitude

Tuesday, 21 August 2007

Most of us missed seeing the only vessel to share the frigid waters with us today. At around 0430, the Norwegian-flagged, 40-something-foot sailboat, Berserk, motored past while Laurier rested at anchor, transiting from Ellesmere Island to Cambridge Bay (Victoria Island). It declined our standard invitation extended to passing yachts, to stop for some hospitality and to share information about weather and general conditions. The sailboat's bow is painted to resemble a shark's gaping, toothy jaw, and its bow rail sports a prominent set of caribou antlers. Reportedly, its skipper is an adventurer of sorts, whose voyage includes the making of a documentary about sailing in the Arctic. From all accounts, Berserk acts its name – creating exciting situations where none naturally occur.

For a time, it looked like today's shore parties might have a respite from their daily climb and grind. The day began clear and gentle enough, with winds of only 18 knots (WNW) and the nearest fog banks nearly ten miles away – albeit under a low ceiling. No sooner had we openly admired the transparent air, than the fog fairly raced over us and parked. When a balding spot allowed the helicopter to launch shore parties, the pilot reported – with a tad more glee than his maturity should allow – that he was soaring in clear blue sky. Only Laurier was in a fog – literally. So, the ship's business continued in a +4°C day. By evening we resumed our usual +2°C temperature and 20-knot wind. By comparison, the sea surface temperature was a balmy +6°C.

Simpson Strait, which separates King William Island and the mainland, contains one of the highest concentrations of navigation beacons and range markers of Laurier's entire Arctic patrol. And, with good reason. Simpson Strait is narrow, with myriad islands, gravel bars and low-lying islets eager to grab an unwary mariner. The worksites are plotted a chart in coloured stickers, so numerous that the strait is obliterated in spots.

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"Sighted nothing, observed same" has become the daily report of our ice observer. We were as close as about 60 miles to the ice, but so far it has eluded us. At one point the satellite imagery was encouraging, as it showed a buildup that seemed to be expanding. But, a major change in wind direction began breaking up what had accumulated, and dashing our hopes in the process. All the passing yachts, and many northern residents we've spoken with thus far, tell us similar stories of far less ice than expected nearly everywhere. It's not right, somehow, to be an icebreaker without something crusty to crush.

Some of us have been studying up for our encounter with that heaviest of water. I knew – and am reasonably expert - about blocks, cubes, crushed and party ice. But, geez Louise who knew there are 20 different stages of ice development; more than a dozen forms of ice; and, at least a six-pack of shapes? You got your light, dark, new, young and old ice, but, names like grease, slush and rind kinda take the sheen off the hard stuff. Growlers might be intriguing to meet, but Bergy Bits sound like something you get at Tim's along with your double-double. No wonder ice observers are frequently known to be speaking in tongues. After two weeks of hoping for a hard encounter of the close kind, I'm thinking a bit of dark, greasy rind might be OK.

ENGLISHMEN & OTHER WILDLIFE

ABOARD CCGS SIR WILFRID LAURIER

Gjoa Haven, King William Island

68° 36' N. Latitude. 95° 53' W. Longitude

Wednesday, 22 August 2007

There's a saying about mad dogs and Englishmen universally used in relation to weather, battles and most other phenomenon that aren't fit for anyone else. As our luck would have it, SV Luck Dragon personified the adage and gave us some unexpected entertainment to boot. Brit, Jeffrey Allison, decided to sail around the planet, but not in the usual pedestrian way followed by most circumnavigators. Instead, Jeffrey, aboard his 23-year old, fibreglass Bowman 49, departed Jolly Olde in June 2007, to circle by way of Iceland, Greenland, the Northwest Passage, Japan and the south Pacific – planning to get home in time for his 70th birthday in April 2008.

According to Allison, "I once crossed the Atlantic to follow Columbus' route, so this time I thought I'd follow the Vikings. When I reached Greenland I began wondering how I was going to get home." Perhaps with just cause, too – he'd lost all his crew by then. Consequently, his son James and mate Philip Welch were pressed into service for the Greenland to Alaska leg, although James is thinking that he might soon have to learn Japanese.

In contrast to our usually-windy, foggy voyage, Luck Dragon experienced flat glassy sea, sunny sweater-only warmth, and windless motor-or-drift days during their time farther north and east of us. "We've burned a lot more diesel fuel than we expected", said Allison.

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Laurier is in the business of helping people who need it on the water, but this time the ship helped by dispensing water. By the time Luck Dragon happened upon us they were out of water, not from any disaster that befell them – James left a tap turned on, which went unnoticed until their tanks were empty. About the entertainment – after sailing three months without incident, and without witnesses, the first time Luck Dragon had an audience (us), they lost a fender overboard while coming to raft alongside Laurier, then spent 20 minutes and countless attempts to retrieve it from the frigid water – only proving once again that boating is indeed a spectator sport.

Oh, yeah – flight ops began at 0730. In generally agreeable conditions, the little Eurocopter connected the dots among numerous sites where crews repaired and rebuilt many more beacons and ranges. There were so many sorties that one had room for an extra 230lbs (mine). At one site on King William Island, we literally were watched like a hawk – by a stocky, young hawk still occupying its nest built at the top of a range marker. Hawks in residence are a common sight in these parts, as is the nearby scattering of goose carcasses and assorted parts that explain the hawk's robust appearance. On neighbouring Hook Island we briefly saw a speeding Arctic Hare – in full stride the size of a greyhound – OK, at least bigger than my wife's two cats. The island was so small it was difficult to imagine how it survived and grew to such proportions – not to mention how it got there in the first place. Since it seemed alone on this Gilligan's Island, perhaps its pent up energy is the result of it not doing for awhile what rabbits are famous for. Where wildlife is encountered, crews minimize or curtail work so as not to disturb creature and habitat. The finding of occasional spent rifle shell-casings suggests the reality of survival in the Arctic.

Beacon and range marker work isn't just cosmetic. Frequently it involves the dismantling of an old tower – often made of old 45-gallon drums – and erecting brand new towers, which the crew builds either on the ship or at the site. It's not good enough to simply build the structure – which can be 30' high (which the crew must climb); it must be in exactly the correct position so that it continues to match information shown on the chart. In the case of range markers, their alignment then has to be confirmed by one of the ship's RHIBs going out to run the bearings. The entire process is labour-intensive and time consuming, made more challenging by bad weather and miserable sea conditions. By the end of this patrol Laurier will be hauling a sizeable load of rusting and busted old 45-gallon drums that have been replaced by shiny new nav aids.

Laurier accomplished a lot of work today, and managed to progress along its track – still moving farther away from home. By 1900 crew and ship rested at anchor in front of Gjoa Haven, on the southeast corner King William Island. Our summer evening featured 15-knot winds and +3°C temperature (less than half that of the sea surface). By 2240 the hamlet's lights dotted and twinkled along a darkened shore. Darker nights foretell the onset of autumn, barely a month away.

Eric W. Manchester

OF POP AND CIRCUMSTANCE

ABOARD CCGS SIR WILFRID LAURIER

Gjoa Haven, King William Island to Taloyoak, Spence Bay, Boothia Peninsula

Thursday, 23 August 2007

This morning dawned a bit warmer, with barely ten knots of breeze. No surprise, though, Gjoa Haven was fog-shrouded. During a brief thinning of the haze, I saw what might be the only conscientious driver in the Arctic. A lone vehicle travelled a dirt road toward the sea, and I watched in disbelief as the driver made a right turn onto a cross street – after actually signaling for the turn.

Being a pedestrian in many northern communities is not for the faint-hearted. But, you haven't as much to fear from cars and trucks. It's the hordes of speeding ATVs break-necking along the unpaved roads, and bursting from cross-trails, that'll kill you, either outright from sudden impact or gasping your last with fright-induced heart failure. ATVs are the transportation mainstays, fitted with some form of load-carrier – and most often hauling children squished between adults – who sometimes wear helmets.

Safety apparently doesn't rank high on northern priorities, which might explain the road warriors – and perhaps also the lack of life jackets in boats. I don't mean lack of PFDs being worn (well, yes I do, too), but rather the complete lack of PFDs even in the boats available for someone to ignore. Maybe it's fatalistic or realistic to not bother wearing a PFD, after all, how long would anyone survive if they fell into water that was only a few degrees above freezing? But, if a PFD is worn, at least it will be easier to find your frigid remains.

Gjoa Haven is where Roald Amundsen's expedition stayed for a couple of years during the 1800s. Several local family names venerate those earlier explorers, and according to one school teacher, perhaps half the children presently in the school are descendants of Amundsen's crew.

Speaking of school, one of Laurier's officers went ashore to give a presentation to a group of high school students, and then repeated it for elementary students. A high school teacher told us that we would have had a bigger audience in the afternoon, because lots of kids don't bother getting up early enough to come to school in the morning. The high school students who attended the show (and the room was full) seemed interested enough in the work of Laurier and Coast Guard, but had few questions during the Q&A that followed the presentation. But, afterward, they encircled the officer and bombarded him with questions.

The elementary students were a different crowd entirely. They sat mesmerized by the slide show, and greeted each new slide with choral oohs and ahhs. They didn't have the quantity of questions, but they were far more enthusiastic an audience than the older kids. Their decorum disintegrated amidst the officer's attempt to distribute parting gifts – a mob scene in every meaning of the phrase.

Eric W. Manchester

All the kids wanted to know our names, and wanted us to know theirs. Many were amused – some appalled - that we did not know our native names. They all had an innocence, a certain shyness that quickly dissolved into exuberance – and the quickest, broadest smiles. One of the teachers newer to the Arctic noted one difference from schools in the south was, among the many permission slips she had to get from students' parents, one of them here is permission to discharge a firearm – because they take the students out on the land.

It was disturbing to learn that most children (old & young) have what could be described as an addiction to pop. One teacher reckons that most kids drink three or four cans of pop by the time they get to school in the morning – and the consumption continues throughout the day (at \$3.00 per can), despite the school's vending machine containing only juices. Add the copious amounts of unhealthy snack food scarfed daily, and it's easy to believe that obesity and diabetes will be life-shortening conditions for many of these kids.

Perhaps more troubling than the junk food obsession, is being told that most grade ten students read and write at the grade one level. It is suggested that it is partially due to the early grades being mostly instructed in their native language – which entails using teachers who can speak the language but may not be otherwise qualified teachers, hence the basics aren't learned during the most formative years. As one teacher put it, "They can't read or write, and they don't care." Reportedly, the kids who do well mostly do so because their parents are involved, and they believe in the value of education. There is an emphasis on trades training, because – as one educator put it – barely one in 100 students has any real academic future.

Teen pregnancy is a problem in the north, so much so that in many cases grandparents are raising children, because – as one person put it - children are having children. Reportedly, the youngest case is a 14-year old girl and her 13-year old boyfriend who recently became parents.

Laurier's helicopter flew three sorties to retrieve hunting parties 40 miles away that called for assistance – claiming they were stranded and running out of food and fuel. In reality, it seemed more like they just wanted a helicopter ride back to town. False alarms are a routine component of Coast Guard's business. Considering the possible consequences, all calls for help get a response.

Gjoa Haven's harbour, uncharacteristically, has been ice-free for a long time this year. Two years ago, the supply barge was beset and had to stay for the season, although its tug was freed. According to one resident, the ice completely cleared out of the bay, but a wind shift brought it all back again just 18 hours later – the only clear ice-free water it saw in a whole year. But, this year has been warmer and rainy and mainly ice-free.

After a full day at anchor, Laurier got underway to its next destination. It's an all-night journey to Taloyoak (Spence Bay), in – no surprise - 25-knot winds.

Eric W. Manchester

STICKER SHOCK

ABOARD CCGS SIR WILFRID LAURIER

Anchored, James Ross Strait

69° 38' N. Latitude. 95° 24' W. Longitude

Friday, 24 August 2007

Today was a fast, wet, windy, short stop at Taloyoak (Spence Bay), a hamlet of some 900 people on the mainland's Boothia Peninsula. We steamed all night, and dropped the pick off Taloyoak around 1100. While the temperature had risen (to +6°C), so had the wind. We had a steady 30 knots blowing offshore straight at us from the hamlet, which occasionally spiked to 49 knots. Despite the short fetch, the wind formed whitecaps barely out from the shore, which built to several feet by the time they reached Laurier's anchorage. At that velocity, the wind caused a subtle vibration that could be felt on the ship's bridge. Underscoring the wind's whistle was a resonance akin to a distance freight train. The pennant flying at the bow was straight out and wrinkle-free. Maneuvering the RHIB against Laurier was trickier in the wind and swells. All things considered, it looked like a great morning.

Early into the day's work, the shore party discovered human remains at one site. The lichen-covered skull (that's all there was) appeared to have been there for some time. The how and the why are as yet mysteries.

Shopping here can be a shock, if or when things are available. We learned that the community had been completely out of stock of pop for about three weeks, and their supply barge isn't due until sometime in September. A 9-volt battery costs \$13.00; disposable diapers \$24.00; potato chips \$6.00. What is truly breathtaking is that a flat of 24 beer and two small bottles of hard liquor land here for a whopping \$285.00 – kinda takes the fun out of hockey season.

One of the ship's officers went ashore to deliver yesterday's presentation to a new audience. Getting ashore was a wild ride in an open boat, which began with climbing down the Jacob's ladder (rope ladder) to its heaving deck. The presentations were better attended, and even better received here than at Gjoa Haven. And, the whole atmosphere in this school was remarkably different, and the children (at all ages) seemed calmer and better behaved. High school students filled two portable bleachers. When it was the elementary students' turn, they overflowed three bleachers onto the gymnasium floor. Amazing to us, the young kids often broke into spontaneous applause at the showing of a new image on the screen. Both audiences collapsed into laughter each time a volunteer was dressed in one of the Coast Guard survival suits with the built-in booties and inflatable flotation pillow. When the shows were over, two students read out thank-you messages to Coast Guard, and presented an appreciation certificate to the ship's officer. Afterward, a large contingent of high school students left on a camping trip as part of a junior rangers program (you may recall the wind was blowing 30 knots, and by now it was lightly raining).

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Sadly, walking around Taloyoak – like at many far northern communities – resembles a stroll through a garbage dump. It's common to see people (children and adults) jettisoning unwanted things. Everywhere you look are items of all description, seemingly abandoned wherever they became of no further use – pop cans, broken equipment, candy wrappers, tires, oil barrels, bathtubs, wrecked snowmobiles, plastic bags – and much more, some of which is blowing in the wind. It's difficult to comprehend a lifestyle or culture that is nonchalant about such large-scale littering.

Our fast day at Taloyoak ended when we got underway at 1800, heading northwest. For five hours we gently rocked and creaked over swells propelled by 30-knot winds. At around 2100 the clouds ahead were broken by a brightly-lit sunset. Separation between sea and cloud bank was great enough for the entire sun to be visible rolling over the horizon. For awhile, the descending sun illuminated the wrinkly undersides of the clouds that straddled the entire evening sky. It was definitely worth the climb, buffeted by the wind and bucked by the ship's motions, to a vantage point atop the ship's bridge to photograph the blazing panorama. By 2300 we were calmly anchored in James Ross Strait, between Boothia Peninsula and Blenky Island.

THAR SHE BLOWS!

ABOARD CCGS SIR WILFRID LAURIER

Victoria Strait.

69° 39' N. Latitude. 99° 39' W. Longitude.

Saturday, 25 August 2007

Thar she blows! A plume of sea spray arched high and away from the several-ton white apparition that leisurely floated ahead and slightly to starboard of Laurier's track. Finally, some ice! First contact occurred at 1500 off Cape Adelaide Regina (70° 01' N. Latitude; 96° 58' W. Longitude), near the confluence of James Ross Strait and Larsen Sound. OK, it was more of a philosophical first contact - we didn't actually hit the Bergy Bit, which was broader across than our flight deck. Nevertheless, it was a close encounter, albeit without the vibe tones and flashing coloured lights, and no tummy-rub for Laurier. Even so, it was enough to buoy the spirits of the ship's Ice Pick and set cameras a-beeping (ever notice how cameras don't click anymore?).

There was no solid ice sheet. Instead, a chunky debris field spread over several miles bobbed and rolled in the swell. The buoyant pieces of solid water came in all shapes and sizes, but there were no icebergs like the ones that mesmerize tourists and terrorize navigators. This ice rose only a few metres above the sea, with a white-through-blue hue depending on the how the light and swells bathed it. Some hunks were non-descript, but others were a psychoanalyst's dream, in a Rorschach, tell-me-what-you-see kind of way. I know that I saw a polar bear doing the backstroke, and am pretty certain there was a walrus sitting on a kitchen counter. But, I didn't see anything that symbolized the juxtaposition of our existentialism with the cosmos – and I really wanted to.

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Navigating around and through the ice field was a welcome break from the monotony of our usual set courses that mostly occupied the autopilot. There were no abrupt turns, but the quartermaster got to actually steer the ship – mainly doing subtle heading adjustments with an occasional curve – and one neat 360° roundabout to examine a particularly intriguing ice slab. For a time the frozen rubble was everywhere off our port side, then it was gone. Our ice observer took flight in the ship's helicopter to see what lay ahead, but after 45 minutes returned to report the finding of only more vacant water.

Still, it was a pretty nice day – mostly-clear sky, sunshine that warmed us to +8°C (double that of the sea surface). After yesterday's blustery wind, which spiked to 49 knots, today's steady 30 knots seemed calm by comparison. It was a treat to gaze off in any direction and be able to see for miles, without the fog that has attached itself to our ship these past weeks. According to the captain, fog this year is worse than usual, and it has interfered with the ship's work more than during past patrols. The wind is stronger, too. He recalls, also, past patrols at this time of year when the crew worked on deck in t-shirts instead of this year's insulated coveralls and toques.

We're heading generally southwest, now, back toward Queen Maud Gulf, in preparation for a long transit to Kugluktuk to rendezvous with CCGS Louis S. St. Laurent to take on more beacon supplies. We steamed on into the evening, subtly illuminated by the northwest sky over our shoulder, which - at 2230 - was still bright. Later, the ship glided to a stop and drifted, in a wallowing kind of way, on 3' swells pushed by 20-knot wind. Laurier and crew rested through the night, while tomorrow's tasks waited nearby.

ICE, BEARS AND BANANAS

ABOARD CCGS SIR WILFRID LAURIER

Victoria Strait.

69° 08' N. Latitude. 101° 01' W. Longitude.

Sunday, 26 August 2007

Ahh-oooh-gahh, ahh-oooh-gahh! Ok, so there was no klaxon, except in my head. But, the announcement, "Attention, the crew: we'll be entering ice in ten minutes", had the same meaning - go to camera action stations and brace for impact. This time it was no frosty tease. The ice stretched across Laurier's course in Victoria Strait for miles on either side of its track, and as far ahead as the eye could discern.

This was a combination of first and multi-year ice – up to a few metres tall in places - remnants of last season's freeze. According to those onboard who know, some of this was rotting – old and disintegrating. Colours ranged from dirty grey, to brilliant white, and subtle-to-vibrant hues of blue – some chunks, overhangs and peaks being nearly translucent.

Laurier slowed to engage the leading edge of the ice, and, as the ship insinuated itself into the crusty perimeter its speed was increased to a comfortable pace that balanced impact with progress. Much of the ice parted on meeting our bow, while some needed the

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encouragement of Laurier's mass on top of it before giving way to our intentions. Periodically, a particularly tough slab would catch and hang across the ship's bow – held like a bone to be chewed – and be pushed some distance before cracking through or falling off on one side or the other. Sometimes Laurier would encounter denser resistance from a floe as big as a neighbourhood, which would momentarily halt its progress. Summoning all 7,800 of its horses, the ship would then rise up and partially onto the floe so that the ice knife on its bow (like a wedge used for splitting logs) could worry a fault into the ice. Such repeated climbing and sawing (for more than a day against one floe in a season past) eventually cracks open the floe so the ship can push its way through.

What's it like inside an icebreaker when it's living up to its name? I nearly didn't get to know, because I spent most of the time we were in the pack on top of the bridge and on the welldeck blasting off hundreds images. During my brief bolts indoors to stop my teeth chattering, I noticed a crunch and clingy slide along Laurier's sides every time it broke through a resistant floe. While steadily cruising through the broader ice expanses, a steady brutish sandpapering resonance came off the hull. Only against the denser slabs did loose objects – including the crew – get rearranged. But, most of the transit was at a fairly steady speed and forward momentum as Laurier carved its swath through the hard water.

Much earlier, our day began in 25-knot wind (and +2°C temperature, the sea surface only +1°C) off the ice-encrusted shore of yet another unnamed island – this one being north of M'Clintock Point in Victoria Strait. Place names in the Arctic are an eclectic mix that ranges from no name at all, to venerating the European discoverer or sovereign of the time, and sometimes being descriptive of an event – usually gruesome, like Two Grave Bay and Terror Bay.

Shore parties made quick work of the maintenance needs on our nameless atoll, and we sailed south and west to our next project. By 1250 Laurier lay at anchor – amid icy bits – off Taylor Island. The wind and current propelled Bergy Bits our way, but nothing of significance rubbed the ship's paint. A lookout kept watch for any floes that could pose a threat to our anchorage – which would necessitate taking up the anchor to avoid being fouled, but none threatened.

Since the work scheduled for Taylor Island was expected to take a long time, a liberty boat was launched for those who wanted to stretch their shipbound legs. This island is remarkable – not because it has a name (well, OK a little bit) – but mainly because of its rocks with crystal surfaces, and its appearance of having been splattered with molten rock – volcanic or meteoric - for which there is no explanation among the crew. I know that we had legitimate work to do here, but I can't help wondering if our stop had anything to do with namesakes – our captain and logistics officer both being Taylors (coincidentally with the same first initial, but not related).

Ice and crystalline rocks weren't the day's only attractions. After we burst free of the major icefield, open water was often punctuated by ice floes of various sizes. Spread out over a

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couple of hours we had the added excitement of seeing three polar bears, each on its own floating domain. Each announcement that a polar bear was sighted stirred a flurry of camera-laden people to their favourite vantage point around the ship. For me, that was the very top of the ship above the bridge. At least the top that still has a deck – there are higher places but they involve death-defying ladders, whirling apparatus and one dome whose sinister look just screams death-ray. Standing 60' above the water provides a dreamlike setting of vessel and sea, where ship noise is replaced by wind whistling the rigging and superstructure as the bow effortlessly slices the way ahead.

How about those bears? They were big, white, furry, inquisitive, masters of their realm, insatiably hungry and cute in a lethal sort of way. Each exhibited the same behavior as Laurier got closer. At first, they took notice in a nonchalant manner, all the while keeping an eye on our looming presence – followed by a full-on head-in-our-direction stare. Soon, a nose thrust upward to sample our scent.

As Laurier ghosted nearer, each bruin stood fully upright, looking in our direction – which elicited the greatest reaction from all the tasty morsels snapping photos from the safety of our big steel ship. As the distance between us decreased, the bear began walking – not running – to the side of its floe opposite to our approach, all the while looking back over his shoulder at us. Perhaps motivated by an innate understanding of the law of superior tonnage – which pleasureboaters sometimes don't grasp – each polar bear ultimately relinquished its ice floe. As we neared, it gently slipped into the frigid waters supporting it and leisurely paddled away. I'm told that polar bears are surprisingly buoyant for their bulk because their fur is hollow. They quickly reclaimed their floating home once we passed.

How incomprehensible must it have been for each polar bear, just moments before our arrival to be secure in the knowledge that it was the biggest thing in its world, to suddenly be in the shadow of our red and white growly beast?

Yes, we have no bananas might be the unofficial motto of Laurier's galley crew. Working a shift that spans nearly 15 hours each and every day, Harold Steed (chief cook) and his trusty sidekick Herb Lynch (cook) together prepare more than 6,000 meals during their six-week Arctic patrol – and they never turn off the coffee pot. With scant breaks for a quick smoke, Harold does the cooking, while Herb handles the baking – mostly from scratch. The work is made infinitely more challenging in rough seas or when crashing through ice, despite which they still must put out three wholesome meals per day.

Few jobs in the fleet are exposed to harsher critique, or can affect crew morale (and health), more than those in pursuit of culinary creativity where re-supply can be in short supply. Sometimes the ship's routine over a long patrol can feel mundane, and the crew's work is always physically demanding, so meals can be real highlights of someone's 12-hour watch. As one leading seaman put it, "I remember what's on the supper menu all day long, working on the beacons. Anticipating that meal keeps me going the whole day." Despite a rank structure to the contrary, the ship's real hierarchy could be considered to be captain, then

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cooks – for good cooking can result in a happy crew in spite of how bad everything else might get.

Laurier's all-electric galley essentially functions with only a convection oven, grill, steamer and some mechanical aids. All the rest comes from the ingenuity and manual labour of a duo in constant motion, which rarely gets shore leave or very much real time off. And, the occasional injury or illness doesn't always mean time away from feeding the ship. According to Herb, who once nearly did, "You've got to die to get a day off." Despite the challenging conditions and long hours in a confined space, there is a freedom of sorts – cooks can use their own menus and be imaginative within a prescribed budget of about \$5 per person per meal. Laurier's crew feeds on the basics of pork, chicken, beef, lamb and seafood, presented in a variety of cuisines – Thai, Greek, Japanese, East Asian, and more. The days of just meat-and-potatoes meals are long gone, but it reportedly took awhile for some of the crew to get used to curry dishes. Now, hot sauces and tangy dressings are common.

Nearly all of Laurier's Arctic foodstuffs – some \$80,000 worth - are packed aboard the ship in Victoria before it heads north in July. That initial eight-ton supply is expected to sustain the three crews that alternately occupy the ship during the ensuing four months. All the meat is frozen, as is some of the dairy. Approximately every six weeks an additional 3,000lbs of perishables share the aircraft with the crew coming to relieve its counterpart. Very little shopping for the ship is done in the Arctic, due to availability, the effect large purchases could have on a remote community's ability to survive until its own annual re-supply, and also due to prices that can make a logistics officer weak-kneed - \$18 for a 4-litre bucket of ice cream – don't even ask about fresh fruit and veggies. But, with steak Neptune entrees and cheesecake desserts, who really needs a banana?

As the evening wore on, Laurier steamed away from its day full of toil and excitement, until reaching the pre-determined spot on a lonely chart where it stopped to drift until it next was needed. Even in repose, the ship continued to move overnight with the tidal current at 1½ knots toward its next work site.

WE ARE NOT ALONE

ABOARD CCGS SIR WILFRID LAURIER

Jenny Lind Bay, Jenny Lind Island

68° 38' N. Latitude. 101° 44' W. Longitude.

Monday, August 27, 2007

Our nighttime drift became a wallow. By morning, 30-knot winds propelled very lumpy 9' swells with frothy whitecaps rolling off their tops. The air temperature of +1°C was frosty, in a do-I-have-your-attention kind of way. Not painful to inhale, but it definitely made anyone sporting nose hairs acutely aware of each follicle.

For awhile during the morning we had company, of sorts. Although we never actually saw the passenger ship, Akademik Ioffe, it was a real-time AIS blip on our electronic chart. But,

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that was good enough to qualify as one of the very few encounters with another vessel that we've had thus far on this Arctic patrol. Our captain recalled how last year, unlike this one, Laurier had to be an ice escort for the Ioffe. In scant weeks aboard Laurier this year, I've learned that fog, wind and ice in this region are markedly different this year, from last – there being more fog and wind, but less ice.

Beacon sites among the Royal Geographical Society Islands, in Victoria Strait, demanded attention. Our shore parties bundled up and commenced blustery combat ashore. One non-descript gravel island, which featured an ice-encrusted shore - off which Laurier anchored - appeared to be streaming a discoloured trail. Reportedly, the low-velocity tidal current was enough to scour silt off the island and disperse it over a broad area downstream.

All things considered, this was not a remarkable day. The ship hummed with its usual activity, our helicopter flew ship-to-shore circuits, and work crews continued their endless tasks to preserve navigational safety. When people and equipment were once again safely returned to the ship, we set off for our night's destination. Strong wind and a course heading diagonal to the swells seemed to heel the ship some five degrees, which added some excitement and challenge to the business of getting around belowdecks. By the time we set the anchor for the night in Jenny Lind Bay, on the east side of – you guessed it – Jenny Lind Island (near the confluence of Victoria Strait and Queen Maud Gulf), the temperature had tripled to +3°C (one degree warmer than the sea), and the wind remained steady at 25 knots – producing a windchill I'd rather not calculate. Fortunately, the bay afforded shelter from the rolling sea, otherwise we'd have been rocked awake in our bunks instead of dozing off to dreamland.

OUR APPOINTED ROUNDS

ABOARD CCGS SIR WILFRID LAURIER

Overnight transit toward Kugluktuk.

Tuesday, August 28, 2007

Morning dawned a familiar scene – fog right down to the deck, and then some it seemed. Perhaps the ship gives off a fog-attracting aura, or something similarly eerie, because this grey murk either stays hooked to our stern everywhere we go or manages to find us no matter how devious a course we sail. I'm convinced that bright, dry sunshine lollygags just beyond our reach, amused at our fog-shroudedness.

We remained at anchor in Jenny Lind Bay, on Jenny Lind Island and contemplated our options – of which there weren't many. We could either wait in hopes the fog dissipates, or leave in search of clearer environs in which to ply our talents. We chose to wait, not wanting to miss crossing off a beacon repair from our lengthy to-do list. But, flight ops were cancelled before the flight deck crew could even suit-up to choreograph the little Eurocopter's comings and goings.

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Waiting did not mean idleness. Marauding bands of ship's crew tackled shipboard maintenance that waited for a shipbound day just like today. There were cables to adjust and lubricate, fittings to grease, things to fix, and even some to manufacture. A calm day at anchor is welcomed by the engine room crew, as the machinery demand lessens to only essential services. Such a day is also an opportunity to do some engine maintenance that can't be done with it operating. Usually, the ship runs on just one of its three main engines at any one time, but crawling half inside to inspect gears and shafts of an engine at rest is infinitely easier without the pitch, heave and roll of steaming across an active seaway.

For all its bulk and might, Laurier is delicate in places – like the fuel injectors for each of its 48 cylinders. The injectors, each one the length of your forearm, taper to barely the diameter of your pinky finger, the tip comprised of tiny nozzles designed to deliver an ultra-fine mist of fuel for optimum combustion. Durability is a feature of the ship's engine room components, many of which have lasted 20 years in this 21-year old ship. Expensive also describes much of the machinery and its parts. One particular fuse apparatus costs \$15,000 – and there are too many of them in use for me to get an accurate count using most of my digits.

It isn't just Laurier's galley that is all-electric – its motive power through the water is, too. True, the horses needed to move the ship are initially fed by diesel fuel, but by the time they get to the end where propellers chew the water you could say there is electricity in the air – in a highly controlled sort of way. Laurier's three main diesel engines, located two decks below the waterline, do not directly turn the ship's propellers. Instead, they operate as massive generators, producing energy that is transformed - via magical things understood only by engineers and Merlin - to ultimately power the ship's big drive shafts as they turn muscle into distance. An advantage of such a power train is that the big engines can be placed nearly anywhere in the ship or even be turned sideways, to better balance the ship since they don't have to be directly in line with the propeller shafts. And, if the props become fouled by ice, it won't result in the explosion of gears and parts normally associated with suddenly jamming the props stopped.

At around 1930 we took up our anchor to begin the long transit to Kugluktuk, some 300 nautical miles away, which we expect to reach sometime on Thursday. Before we departed, folks on shore – if there had been any folks on the shore of this lonely bay – would have been entertained at Laurier's repeated pirouettes in alternating directions, driven by the ship's powerful bow thrusters. Prior to performing certain maintenance inspections, the thrusters' hydraulics needed a warming-up and this seemed like as good a place as any to do our dance.

Once underway we discovered the entire area was littered with icy bits and bigger hunks. Some of the ice we previously saw farther north in Victoria Strait drifted south to lay strewn across the mouth of our anchorage. This ice didn't really impede our progress as it was easy to steer around.

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For a time during the earlier evening I rode along in the derrick operator's high-pedestal armchair, lost in the ship's rhythmical motion and the wide-angle view from more than two decks above the water. That vantage point (behind rows of levers that just scream what-does-this-one-do?) offers less vibration and ship noise, halfway between the bridge and welldeck. Its out-of-the-way peaceful location fosters a palpable sense of aloneness onboard a ship carrying three-dozen souls.

By 2100, with fog thickening its hug around the ship, Laurier slowed and activated its fog signal. When ice began appearing on our radar, an additional lookout was posted and the way ahead was periodically scanned by spotlight. The fog signal continued its mournful tune until around 0100 and the ice vigilance until much later. Fortunately, neither fog, nor ice, nor darkness of night kept us from our appointed rounds.

ARRESTED DEVELOPMENT

ABOARD CCGS SIR WILFRID LAURIER

CORONATION GULF

CONTINUING TOWARD KUGLUKTUK

Wednesday, August 29, 2007

Hump day. As in, over the hump. Nearer to the end than the beginning. We're past the halfway point in our six-week patrol. That is this crew's perspective, looking ahead to being relieved by their soon-to-be northbound colleagues, but it's not mine. With just eight weeks until Laurier and I arrive home together at Victoria, BC, I'm beginning to wonder if enough time remains for me to complete all my tasks. Odd thing about being a writer and photographer – I have to do the all writing and all the photography. Funny how that didn't occur to me earlier! How I envy the crew's 12-hour watches, even if I do get way more coffee breaks than do they (and I suspect also a tad more of Herb's incredible baking – a tad being measured in kilos as the square root of a long ton, cubed).

Overnight, we covered the remaining distance toward Cambridge Bay (on way to Kugluktuk) at a slow bell, seeing as how we were again in sparsely-charted waters. By morning the fog lifted somewhat. No flying or off-ship work was contemplated. Few knew that some might be not-too-distant away.

As the day unfolded, shipboard maintenance swung into high gear – chipping; sanding; painting; re-arranging equipment and cargo; cleaning; greasing; and, pulling out portable pumps, chainsaws and other equipment for routine inspection to ensure it would work if called upon.

Around noon, Laurier abruptly reversed course back toward Cambridge Bay, which we passed earlier in the day. Instead of going into its bay, we anchored nearby – on standby to RCMP who might have need of our assistance. We waited all afternoon for events ashore to evolve, and then launched our helicopter just after suppertime.

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We supplied airborne transportation to local RCMP (who were armed and armoured, while the helicopter was neither), to search for and apprehend two crewmembers of a foreign-flagged sailboat. While details are still emerging, this incident involves people entering Canada illegally. Authorities believe that this illegal presence in Canadian waters is no accident, as two of the sailboat's crew members were deliberately put ashore in an isolated spot to conceal their existence.

An aerial search of the desolate mainland shore, well south of Victoria Island, ended peacefully with the apprehension of two male suspects – who then joined their three former-shipmates in Cambridge Bay RCMP cells, awaiting their court appearance.

The RCMP said that had Laurier not been in the area, and available to fly them across Victoria Strait, they would have had a long wait for air resources from Resolute or Yellowknife - or would have had to rely on a chance aircraft being in Cambridge Bay – and available – when they needed it.

The surveillance and arrest was a joint operation involving Canada Border Services Agency, Royal Canadian Mounted Police, and Canadian Coast Guard. The three-agency collaboration was possible because CCGS Sir Wilfrid Laurier (and its helicopter) was in the general vicinity and went out of its way to be of assistance.

This story is as much about the security issue of illegals in our northern waters, as it is about the inter-agency collaboration in a vast part of Canada that is generally bereft of needed resources, and light on authoritative presence. Had Laurier and its helicopter not been here (from Victoria, BC) on a short seasonal patrol, looking for the two suspects would have been a complicated, time-consuming, and more dangerous exercise for the police officers via small boat and a ground search.

With the helicopter away, the ship resumed its passage toward Kugluktuk at a sedate three knots. When our helicopter returned around 2100, Laurier picked up its pace for the balance of the nearly 24-hour transit to rendezvous with the Louis at Kugluktuk.

Tonight's sunset was a brilliant one, which we actually got to watch - thanks to a generally clear sky containing just enough cloud to make the event memorable. For a time, the sun only peeked through rips in the low-lying cloud banks. At just the right time – literally at the last moment - the full blazing ball of the sun became visible as it fell toward, and rolled over the horizon. For a long time afterward, a moving symphony of hues bathed the ruffled undersides of the clouds. Eventually, the light faded, but not entirely to blackness.

Our evening sky served yet another treat. As the sun set in one direction, from behind us the moon burst upward from its hiding spot behind the broad cloud band. Soaring through clear air, it glowed so brightly that it illuminated a wide swath of sea in our direction.

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Later that night, near midnight, heavenly displays continued. The northwest sky was still bright, the moon lit up the high clouds that now hid it from our view, and a lone star shone in the high western sky. A star! I waited three weeks to make a wish upon that.

LOUIS, LOUIS

ABOARD CCGS SIR WILFRID LAURIER

Anchored at Kugluktuk

Thursday, August 30, 2007

Today is the day! It's been the subject of many conversations during the past week or so, and by the end of today's passage through Coronation Gulf we'll be nuzzled up against CCGS Louis S. St. Laurent – more commonly referred to as The Louis. If not the actual pride of the fleet, it is the largest ship in Coast Guard – two whole ship classes larger than Laurier, capable of carrying 100 people (double that of Laurier). The Louis lives in our Arctic longer each year than any other Coast Guard ship, not getting home to Halifax until sometime in November. Since it is the last to leave the Arctic each year, they commonly claim to close the Arctic. This year, though, they can't make that claim, because Coast Guard's next largest ship, Amundsen, will be wintering in the Arctic to conduct scientific research.

Finishing our voyage to Kugluktuk was a pleasant, uneventful 12-knot cruise on flat sea, under sunny skies. How warm was it? The +6°C temperature and ten-knot wind fostered the airing out of Laurier, as most of its outer doors and hatches stayed open through the afternoon. The absence of our three-week clingy fog made for a bright day, in which we could see for – well, not forever – but quite a long way. The passing shoreline was vacant of animals, humans and shrubbery – we're way above the tree line here. Every now and then the bald vista was punctuated by a DEW Line site, which always looks out of place - and just a smidge sinister.

When we arrived at Kugluktuk around 1800, its bay seemed smaller than I remembered it from when we initially arrived three weeks ago. This time, much of it seemed filled by the anchored Louis. By 1830 our two ships were securely rafted together. Moments later Laurier seemed as silent as a ghost ship, as most everyone who could migrated to the Louis for a tour or to find old acquaintances.

The Louis is much taller, wider, and longer than Laurier – and with what looks like an oversized double-car garage on its flight deck it can carry three helicopters. Large? I should say so! Its bridge is so beamy that you feel compelled to find a telephone in order to speak from one side of it to the other. And, being from the Maritimes that ship seems to speak a considerably different version of the Queen's English. Its configuration is vastly different than Laurier's. Since the Louis principally does only icebreaking and science work, it doesn't have the big-capacity derricks or the welldeck of the more multi-purpose Laurier – in fact it has no place to handle the large, long-leg buoys with which Laurier routinely wrestles. Our tryst with the Louis will be short-lived – just a day or so to transfer some equipment and supplies for the scientists who will soon be joining us.

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While in Kugluktuk I got a firsthand look at healthcare in Canada's Arctic. There are very few hospitals, but most communities have a health centre. Doctors here are as scarce as a can of pop just before the supply barge arrives. Nurses are the main providers of medical treatment in the far north, up here on contract from all over Canada. Most came for the experience or the money, but many stay long past when they originally planned to go home. Here they treat everything from chronic illness, to emergency handling of life-threatening trauma – and all-too often deal with the Arctic epidemic of suicide. This small community, sadly indicative of others in the remote north, has seen one suicide per month for the last nine months.

Only fairly basic-level examinations can be done here, and some tests like ECGs – or x-rays when the equipment is working. More serious cases, or ones requiring greater investigation, end up on a plane bound for Yellowknife where there is a real – albeit small – hospital with doctors and more sophisticated apparatus. Most children are not born in their northern settlements, as expectant mothers are sent to Yellowknife or Inuvik to give birth.

Besides seeing the Louis today, another treat, of sorts, was to actually see Kugluktuk. When we arrived for crew change on August 8th, the blustery wind driving nearly-horizontal rain-slush pretty much obscured the hamlet from view. In today's sunshine, the settlement appeared to have more breadth and depth than was previously evident.

DEATH BY DIAGNOSIS

ABOARD SUPER 8 HOTEL

ADRIFT IN YELLOWKNIFE

Friday, August 31, 2007

What if you need medical attention in the Arctic? I found out, the expensive way.

Laurier carries several rescue specialists, who tend to the bumps, scrapes and sometimes more serious ailments of general shipboard life. For Arctic patrols a medical officer is added – a healthcare practitioner with experience being the medical lone ranger. There is consultative backup through a connection in Halifax, and local northern health centres are sometimes utilized.

In my case, swollen calves (mine, not bovine) led to visiting the ship's medical officer. My simple self-diagnosis was that my malady stemmed from writer's butt – lengthy sitting before a computer that refuses to write, until blood no longer circulates to the brain (although, sadly, that sometimes produced my best work). Wrong! Apparently, besides simple edema, it could also be caused by a blood clot or heart failure – neither of which sounded appealing, nor suitably exotic.

This is where southern and Arctic medicine drastically diverges. The quickest way to rule out all the potentially-lethal causes (which could be really bad for my book project) is to have a

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chest x-ray, ECG and ultrasound. No problem, just go next door and take a number – except that I wasn't in the land of Starbucks any more.

Unfortunately for me (and everyone who lives in far north communities), Kugluktuk just has what is called a health centre, staffed only by nurses, and equipped with a mix of old and new gadgetry. They could perform the ECG and the x-ray, but the nearest ultrasound was a two-hour flight away, in Yellowknife.

Now is it just me, or is it actually ironic that in order to test for a potentially-lethal blood clot, I had to sit in a cramped aircraft for nearly two hours? If the DVT didn't kill me on the way to get the test and treatment, surely the airfare would. Everyone in the Arctic who needs more involved healthcare faces the same dilemma, because all the really cool equipment and services are somewhere else.

Upon arrival at Yellowknife's hospital I was greatly comforted by the feeling of being in a big-city facility – the required paperwork before I could get past the dotted line, the hour-and-a-half wait in emergency, being forgotten in an exam room for nearly an hour – ah, civilization at last.

Eventually I saw a young female doctor, fresh up from the south, who followed a textbook-style examination. Then, in came the real doctor – one who looked like she'd always been practicing in the far north, but actually outside – and maybe not just on people. The burly medico did all the tests everyone else did, plus a few additional pokes and prods of her own, then looked longingly into my eyes and said, "So, why are you here? There's no need for an ultrasound because you don't have heart failure or a blood clot." So, I tried my worn out, unanswered question on her – the one about the odds of simultaneous blood clots in both legs – and she just rolled her eyes, smiled, patted my pudgy ankle and said, "Have a nice flight."

Trouble was, my flight back to Kugluktuk didn't depart until the next day, and my getting back aboard Laurier is entirely dependent on the weather being good enough for us to land there. Any delay would leave me stranded beyond the reach of Laurier's helicopter to retrieve me. In the meantime, I needed a place to stay overnight – the airport not being an option because it is locked up during the midnight hours. So, Super 8 it was – even with a discount my bunk in Yellowknife cost \$160. As my luck goes, for my ten-hour layover, I ended up with a suite to wander around – it being the last room available. To add insult to injury, supper in this big city was the dregs of soup and sandwich minutes before the adjacent Tim Horton's closed.

Reassurance or false alarm? Either way it was a \$1,000 trip to the doctor. At least I didn't have to bend over and cough – or, did I?

Eric W. Manchester

YOU CAN GET THERE FROM HERE

ABOARD CCGS SIR WILFRID LAURIER

Sisters Islands

68° 24' N. Latitude. 111° 35' W. Longitude.

Saturday, September 01, 2007

Yellowknife's day dawned dreary and wet. Drizzle interspersed with rain felt all the wetter in the +10°C air through which it fell. I hoped it would look better as we flew north. But, there was more about Yellowknife than its soggy morning that was unsettling. A scan of the local newspaper cured me of ever again complaining about Victoria's house prices. In a town of 18,000 folks, a double-wide mobile home on a bit of land goes for \$300,000. Less mobile houses are way above that, and \$1,400 per month will rent you an average one-bedroom apartment. A local resident said that you could find places for around \$900, but only your garbage would want to live in it.

Soon, thankfully, it was time to board my flight to Kugluktuk. The two-engine Dash aircraft was stuffed with people and cargo – in fact the first six rows were permanently configured for non-human occupancy. Not a lot of jets fly in the north – mostly it is propellers hauling the essentials inside Dash, Hercules, Buffalo and Twin Otter planes, some on floats.

During the climb out of Yellowknife we broke free of the gloom, into clear, bright sky with seemingly endless visibility. Reuniting with Laurier began looking like a distinct likelihood. But, by the time we'd been served our food-like breakfast snack the ground was obscured, and just about peanut-and-pretzel time the sun was long-gone. Not far out from Kugluktuk, serious moisture was streaming past the windows, looking for all the world that Laurier's fog banks found a new machine to torment. It was then that my seatmate regaled me with tales of all the times she had almost landed at Kugluktuk, only to end up back in Yellowknife because they just couldn't get it down.

Usually I don't like hearing the aircraft's machinery and hydraulics – a throwback to all the sleep I lost in military transports, I suppose – but this time I was elated to hear the whine of flaps extending and the thud of gear down. At least that indicated our pilot's intent to aim low toward the runway. When we bottomed out with shakes, rattles and a braking-induced heave forward in our seats, I was positively ecstatic. Maybe this wasn't Nirvana, but it is the place where I saw a little red and white helicopter waiting for me as we hurtled past toward our complete and final stop in front of the terminal building.

Fortunately, we arrived in time to catch Laurier still in the area. The ship's helicopter hopped me out to the ship as it began an easterly run to yet another beacon to be tweaked. For a long, long while we steamed away under clear, sun-drenched skies that somehow made up for the moderate wind we've come to know all these weeks.

Our course through Coronation Gulf was mostly scenery-less, the barren land flowing from one set of featureless contours to the next, with an occasional exception. Over hundreds of

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miles containing thousands of islands, atolls, islets and spits bereft of people, the vastness was frequently spoiled by yet another DEW Line site's domed reminder of mankind's inherent distrust of itself.

By 2100, our sunset was mainly masked by huge, wet-looking cloud banks, which also partially covered the rising half-moon. We anchored for the night near Sisters Islands. Four-foot swells scouring Laurier's hull and a re-building wind resumed their onslaught against our repose. It was great to be home.

TRUTH IN ADVERTISING

ABOARD CCGS SIR WILFRID LAURIER

Bernard Harbour (mainland)

68° 46' N. Latitude. 114° 43' W. Longitude.

Sunday, September 02, 2007

Today we caught a break from our usual strong northerly wind and spirit-smothering fog. Instead, we got 30-knot westerly wind, rain with occasional snow, and an inspiring, vibrant rainbow that encircled our shore party as it toiled at yet another beacon. Another break, of sorts, came our way as the beacon work wrapped up earlier than expected. That ended the off-ship labour for today, as only the one site needed our attention in this area. Sometimes, you do get lucky.

Remember that 30-knot westerly? Well, for the balance of the day we beat directly into it and the 6' swells it pushed up. The long slog into Dolphin and Union Strait soon fell into a predictable rhythm amidst driving rain. Far flung massive sheets of spray off our bow were so impressive that even those who've seen it all before expressed an occasional "Wow".

During the afternoon the ship was abuzz when we were buzzed. A Dash 7 aircraft belonging to Canada's ice and pollution surveillance service made two low-level passes along our flank, and then disappeared toward the massive stacks of very wet-looking cloud banks, which lay directly in our path.

Our day's destination was Bernard Harbour, on Canada's northern mainland. It is a harbour in only the loosest meaning of the term. Oh sure, on the chart there is an anchor symbol surrounded by Cox, Chantry and Teddy Bear islands, and an electric light shines from a nearby DEW Line site. But in reality there is very little shelter and the anchorage seems more designed for that new breed of smart cars you see occupying little more than motorcycle parking spaces. The surrounding area doesn't rise much above sea level, and the depth leaves only five metres beneath Laurier's keel.

The most impressive thing about Bernard Harbour is the getting into it, which is akin to threading a needle, if you do your threading in big wind, low visibility and contrary current – with points deducted for hanging up on the edges. Entering Bernard Harbour is not suited for those with squirrel-like composure. Luckily for us, our arrival was at the seasoned hand of

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our captain, Mark Taylor, whose relaxed manner belied his degree of concentration. Deft manipulation of throttles, coupled with precise helm adjustments, put the anchor down on exactly the right spot to maintain our stone's throw margin away from all sides of this so-called harbour. Did I mention that all this deftness took place in 22-knot northwesterly winds?

HAPPY LABOUR DAY!

ABOARD CCGS SIR WILFRID LAURIER

Underway in Dolphin and Union Strait

Monday, September 03, 2007

While most Canadians were observing the holiday (how exactly does one observe a holiday? – Oh, look, I see Labour Day – too bad it's still wearing white!). But, I digress. While most Canadians guffawed at a fashion faux pas of the day, or swilled their last beverage before collapsing the tent for the long snarly drive home, or comforted kids traumatized at the realization school starts tomorrow, or.... Oops, I digressed – again – sorry.

It's Labour Day in Canada. For Laurier's crew, it's a holiday in name only, but one which personifies the labour part of its name. As with nearly every day previous, the work portion of this one began shortly after breakfast – mug-up box filled with food and hot drink; tools and supplies loaded into the Eurocopter's trunk; shore party suited up in fetching insulated fluorescence; lifejackets and seatbelts snugged into place; whining turbines leading to a grunt and heave skyward; long hours labouring in the name of marine safety. Laurier's deckhands don't always work on deck.

Except for the 25-knot wind and +2°C temperature, the bright sun overseeing a clear sky stretching from horizon to horizon reminded of summers past. Its rays sparkled across waves, ship, helicopter and shore. By dawn's early light we clearly saw how very tight an anchorage this is. Last night we peacefully slumbered in very close quarters with gravel bars and islets. The anchorage looks so tiny that it felt like we'd have to step outside of it just to change our mind. Ok, I won't digress again – promise - sorry.

There is no community at Bernard Harbour, just a pair of 50,000-litre fuel storage tanks near the beach, a collection of derelict buildings scattered about the land, and yet another DEW Line site in the distance. According to the sailing directions, Bernard Harbour once featured a trading post and was used for wintering small vessels. Reportedly, the DEW Line site was abandoned during the 1960s. If so, why then does it need to keep a yard light burning? Begs the question of just how abandoned is it – and any chance the light is solar-powered?

The all-day beacon work afforded an opportunity for me to go ashore and explore. Another passenger accompanied me for a short distance, until our interests led us in separate directions. For nearly four hours I hiked alone, while the sky became punctuated by big fluffy clouds, the strong wind remained steady, and the temperature climbed one whole degree.

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My leisurely pace often stopped entirely, while the vista alternately enthralled and appalled. For what seemed only fleeting moments, I sat 20 minutes on a rock mesmerized by a well-fed gopher going about its daily chores and occasionally stopping to stare at me – it probably being equally fascinated by my luminous coveralls. For a long time, I walked inland across a vast rolling Arctic plain. Its gently sweeping outer ridges later rose up to define a valley containing streams and boggy wetlands. Lots of small-to-medium sized animal droppings dotted my route, as did numerous hoof prints. Twice, I encountered the same big noisy gaggle of Canada geese, but no other animals. Later, I learned a group of Inuit hunters passing through the area in search of musk ox suspected the presence of a grizzly bear.

No manmade sounds polluted the Arctic quiet of my wandering. The peace was so profound, and the silence so intense, that even the little voices in my head hushed to revel in this solitude. Ok, so I promised not to digress – but I'm not always that alone!

Some miles along the valley floor I altered course toward higher ground. To reach it, I had to strategically plant my boots across two bogs thatched by squishy sinking spots and denser weight-bearing tufts of grass-on-dirt. Arriving at its base, I realized that the high ground was higher than it looked from way back there. At its top lay photo ops and a shorter route back to my ship – so I climbed, slipped a bit, then climbed some more, gained better footing against the soft soil, then climbed some more. By the time it hit me that this high ground was really a lot higher ground, continuing up was my only option – looking down just once convinced me of that. When I reached the plateau's topsides, nearly 200 feet higher than where I began, manmade sounds definitely were evident – my wheezing overlaid on frequent exclamations of, "Holy crap!"

That was the enthralling portion of my sojourn. Derelict buildings, deserted equipment, sabotaged structures, abandoned fuel drums and discarded debris comprised the appalling part.

My Holy Grail high ground held a small cluster of buildings, weathered, peeling and savaged by Arctic winters. Uphill from a forlorn gravel airstrip is someone's former residence containing a lonely wrecked stove, what looked like a bunkhouse, and workshops whose insides were gutted, now silently bear witness to an earlier enterprise. A radio tower, once tall with purpose, now lay smashed over the edge of the plateau – having been released from its supports when it no longer had value to its owner. Strewn across the property were fittings and hardware deemed not worth picking up – some still with remarkably shiny finish.

Bernard Harbour's shoreline, like so much of our Arctic, is littered by countless 45-gallon barrels in every helter-skelter pattern imaginable. Some still sport paint; many are deformed; and, most are rusting hulks. All are obscene reminders of a great number of someones' flagrant disregard for this place. For miles inland, single barrels stood or laid in isolation – a testament to the relentless power of Arctic winds.

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Tin cans are the other eyesore of our Arctic. Crushed or intact – always rusting – they mark many apparent former encampments. Sardines and corned beef have been popular in these parts – as evidenced by the quantities of their distinctively- shaped containers. Heaps and clusters of cans pretty much dash the myth of being at one with the land. By the looks of things, I don't think this rubbish is solely caused by stupid southern louts – are you listening Nanook?

Back onboard Laurier, this being Labour Day, we did what Canadians do – we had a barbecue (even some beer for the off-duty folks) out on our deck. There were some notable differences from barbecues back home – backyarders wearing parkas and toques being the most obvious. It didn't snow, and the ship's bulk shielded us from the brisk wind, but you didn't let your steak linger on the plate lest the Arctic air refrigerated the cookedness right out of it. We mingled, sipped, ate – and ate – and for all appearances enjoyed the end of a long weekend that nobody here actually got.

Soon, it was back to business. The barbecues were stowed, remaining food cleared and the ship readied for its 1930 departure. Putting our nose into 30-knot wind and 6' swells, Laurier got underway for a long, overnight voyage toward Holman, on a far-off corner of Victoria Island.

During the later night hours, the sea flattened, the wind calmed, and, here and there the sky opened to reveal its true depth. For a time, Laurier sailed beneath the undulating glow of the Northern Lights. It might just be me, but I'm certain there are times when the Aurora Borealis pulsates with broad sheets of light and colour that are felt as much as seen. Happy Labour Day, indeed.

STONED IN THE ARCTIC

ABOARD CCGS SIR WILFRID LAURIER

Underway in Amundsen Gulf

Tuesday, September 04, 2007

Some 12 hours after departing Bernard Harbour, the snow-dusted hills near Holman came into view. Yes, hills – with real elevations above sea level, unlike most of the terrain we've seen so far. By 0900 Laurier rested at anchor, framed by shorelines that ran away and up from the ship. Our day-stop at this community of 460 souls on the southwest corner of Victoria Island (facing Amundsen Gulf) was a busy one. School presentations and visitors from ashore occupied many of the few available hours. Our little helicopter remained cocooned in its hangar, as there was no off-ship work scheduled.

Holman has apparently been discovered, and is now on more than just our map. So far this year, four other ships visited – three of which were cruiseships. Art sales to Arctic tourists are good enough, according to Holman's craft co-op (which accepts debit and credit cards), that it doesn't send many works south to be sold any more.

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Typical of the receptions at all ports of call thus far, Holman's residents were often overtly friendly – asking my name, telling me theirs and offering a hand to shake. Everyone of an age is a wealth of information about life here. According to one lifelong resident, Holman is a settlement that was created by the government rather than naturally evolving. People in this region used to mainly live out on the land, and didn't tend to stay very long in any one place as they pursued seasonal hunting, fishing and sealing. That is, until the government – not sure which one, because they all are called the government – wanted everyone to live together in more-or-less one place. Sounds like the feds, to me.

Not all progress has been good. Besides residential schools that separated families and did irreparable harm to a generation, other influences from down south have also affected daily life in this hamlet. "Time didn't used to matter", said one lifelong resident. "But, now there are faxes and answering machines, and meetings to attend – always meetings. Life here has changed a lot." The community embraced the high-speed internet that connects Holman to the rest of the world. Some 98 of the hamlet's 105 homes has a computer. Unfortunately, technology also brought online gambling addiction.

While this settlement's general tidiness is an improvement over the others we stopped at so far, its teenage students were not. This was the unruliest audience of the trip, many of the kids having practically no attention span and exhibiting an unsettling level of general rudeness. If, as reported, teachers can be paid \$120,000 per year up here, you'd think they might have a better grip on their charges. The crowning behavioral touch came when a group of teens threw rocks at the Coast Guard RHIB after being told they could not go out to visit the ship unescorted.

This morning featured flattened seas and a heavily-overcast sky. Locals said that snow fell for most of the past weekend, but fortunately it melted on contact with the ground. Only the higher hills outside the hamlet retained their white mantle.

For more than two hours I hiked the highlands outside the hamlet. One rise in particular, Ulukhaktok Bluff (at several hundred feet above sea level), provided an expansive panorama of hills, hamlet, sea and ship amid air that felt much crisper than at its base.

Several residents came aboard Laurier to sell their crafts, and found some customers. Our galley (and ultimately us all) benefitted from one transaction in particular. In exchange for fruit – a scarcity on shore (and by now, onboard Laurier, too), Harold traded for an exquisite Arctic Char.

Not all the ship's visitors enjoyed their experience. Several women quickly became nauseous – one said the ship's motion made her feel queasy; one became so by the feeling of being closed in belowdecks; and, another turned a bit green from looking down from our bridge 50' above the water. Fortunately, their maladies resolved peaceably and we needed no wet cleanups in aisle three.

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Barely 12 hours after its 12-hour voyage to Holman ended, Laurier was again underway. This time, we're beginning a long ride toward Sachs Harbour, on a lonely corner of Banks Island facing the Beaufort Sea.

BREAK'S OVER

ABOARD CCGS SIR WILFRID LAURIER

Sachs Harbour, Banks Island

71° 57' N. Latitude. 125° 22' W. Longitude

Wednesday, September 05, 2007

At around 0100 we encountered ice while transiting Amundsen Gulf. Because it was fairly spread out, we were able to avoid contact by skirting around its perimeter. Just six hours later, we were into denser pack ice that required some pushing but no serious breaking. Often we found alleyways through it, so we avoided hard contact altogether. A half-hour later the ice spread thinner and farther apart, which allowed us to resume 12 knots toward Sachs Harbour.

The day hung a heavy overcast above us, which dimmed the daylight and made the +2°C temperature all the more chilling. We had generally clear sailing, but the radar display was ice-spotted all around.

Our ice observer, Erin, figured the ice blew down into Amundsen Gulf from Prince of Wales Strait, which separates Victoria and Banks islands – which explains its now-you-see-it, now-you-don't persona. Prior to entering the ice field, we were lifting and rolling over a moderate swell that was catching Laurier from its starboard quarter (just ahead of and to the side of the stern) – which made me thankful that someone invented handrails. That sea followed us for a time once we were into the ice, and it was creepy to see (and sometimes hear) the bigger ice hunks heave and roll in it. Farther into the ice field, the sea smoothed as we continued on a generally northerly course.

By 1400, when we dropped the hook in about 40' of water at Sachs Harbour, the sun was breaking through and the temperature rose to +4°C – fairly pleasant under a three-knot breeze. Sachs Harbour – affectionately known as Sachs - is home to about 120 people, and is the smallest settlement we visited so far. If the hamlets we visit get any smaller, we'll have to take our own buildings ashore with us to wander around. Sachs sits barely on the edge of a long, sweeping, real-sand shore, which alternates between low and high-bank topography. At one end, a long spit careens back toward the hamlet, nearly creating a land-locked basin behind its barely-above-sea-level spine. Looking in the opposite direction, there is only the endless vista of the Beaufort Sea floating toward far-distant Alaska.

Our anchorage was well offshore from Sachs' shallows, exposed to most anything that came our way – including the ice chunks that began flowing through in the noticeable current. Nothing sizeable yet came our way, although our Ice Pick fairly salivated over the satellite image of a 20-mile wide ice floe out in the Beaufort.

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Our arrival coincided with a town meeting to receive a presentation from the captain of CCGS Amundsen, and some scientists, regarding that ship's need to moor a big fuel barge in the area this winter to supply its over-wintering in the Arctic. After discussing all the good scientific reasons for Amundsen being here for the winter, and the possible effects on area wildlife from the added and substantial activity, the hamlet gave its support to Coast Guard's plan.

No sooner had Laurier anchored, than a shore party launched to work on a navigation beacon near the settlement. They were back in time for supper, over which they contemplated the much larger project slated for tomorrow. Labour Day was now but a vague memory.

YES, IT'S REAL

ABOARD CCGS SIR WILFRID LAURIER

Sachs Harbour, Banks Island.

71° 57' N. Latitude. 125° 22' W. Longitude

Thursday, September 06, 2007

Summer is over. It ended with a thud against our hull. Early this morning the current carried in ice floes to begin choking our anchorage. For a time, it still looked summery, what with a blazing sun rising above horizon-clinging clouds, which made the clear sky above us so brilliant it was nearly painful to gaze at. With Laurier's flag barely aflutter in zephyrs that aspired to five knots, it was apparent that the serious wind we've become used to hadn't yet found us. But, there were signs the seasons were morphing – fogged or frosty windows, air temperature of a crisp +1°C, and a radar display so heavily dotted with ice targets it resembled a teenager's worst acne nightmare.

If this day didn't contain the toughest job yet for the shore party, it certainly scored high on the misery-meter. Sachs has a set of range markers located virtually within the hamlet's realm, and today's task was to dig out the supporting legs and replace certain parts. It was a six-shovel day for a two-person crew. By day's end, the task was accomplished and the workhorses survived to complain about it. In a cruel twist of irony, as the crew grunted its way through maintaining that navaid, local townsfolk stopped to enquire if they had come to finally take the thing down.

Ice continued filling our bay throughout the day, so densely packed that our anchor had to be taken up and the ship's position kept manually – through frequent compass bearings and engine power. Laurier doesn't have a dynamic positioning system to station-keep automatically – well, it sort of does – his name is Ben, the bridge officer tasked with keeping us in place all day.

Another school, another presentation to make. This one was more orderly than the last, and afterward many of the students got to tour Laurier. Ship to shore shuttling became

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increasingly challenging as more ice floes filled the bay, which resulted in the RHIB carefully picking its course through the moving, frosty maze.

Anyone doubtful that climate change is real should spend a few moments with Fred Raddi and Joseph Carpenter, lifelong residents of Sachs Harbour. They'll tell you how their world changed during their lifetimes – like how it's been two years since they had the usual storms blowing in from the Beaufort; or how current winters of -40°C are much warmer than just 15 years ago; or how they miss travelling by skidoo and dogsled in April and May because all the snow of yesteryear is now bare dirt and mud; and how the Arctic fox still turns white at the usual time, but there's no snow to warrant the camouflage. They can tell you lots more – especially how they fear for the future of the 70,000 muskox and 800,000 snow geese that seasonally call Banks Island home.

By early evening Laurier again rested at anchor, the ice having thinned enough to give Ben a rest. After dinner, there was swimming for those inclined to wrestle into immersion suits. About a half-dozen folks took the plunge of the ship's ladder and paddled in the Beaufort Sea. A nearby ice floe attracted them all. One by one, like mutant-coloured polar bears, they scrambled onto the floe to scamper, frolic and be photographed. One hardier crewmember, wearing only a PFD, shorts and a smile, jumped off the gunwale. He hit the sea with a shriek, and a nearly-simultaneous leap onto the waiting Jacobs ladder on his way directly to Laurier's hot tub. In the end, all swimmers survived and the hovering rescue boat was not needed.

The day ended on an ominous note – the wind swung around to hit us from the east, and the once-idyllic breeze resumed its 20-knot harangue against our superstructure.

NOT QUITE A TEN

ABOARD CCGS SIR WILFRID LAURIER

Underway in Amundsen Gulf

Friday, September 07, 2007

Autumn might not officially begin until September 21st, but today certainly had to mark the end of something, for our thermometer ran out of numbers. During much of this morning, it sat on 0°C. Funny that nothing can signify so much – like how I really should have bought that muskox-bladder, sealskin-lined flying helmet with the polar bear fur accents back at the Co-op. Frosty daybreak breezes – exactly like today's 17 knots - make me glad that I'm not Prince Charles' ears twin. No amount of large-animal hide could keep those Dumbo flaps warm. But, it was sunny and in between big fluffy clouds, and the sky was so clear it was easy to believe that you could see forever.

The shorter half of the range markers in the hamlet was all that needed attention today. Fortunately, it turned out to be the quicker of the two beacons to repair. By noon, our shore party and its helicopter were back on deck. The crew headed for lunch, and their ride

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snuggled into its cocoon. In short order, Laurier picked up its anchor and began a two-day passage to Kugluktuk, to embark a small science contingent.

Sachs Harbour, while the tiniest of our ports of call, was the nicest one to visit thus far. The school kids were a nicely-behaved treat for our presenters. The hamlet wasn't just clean; it was tidy – bordering on orderly. Walking the short distance from one end to its other, I got a sense this community had some pride of ownership about itself that hasn't been obvious at any of our previous ports of call.

Leaving our ice-infested anchorage was a sometimes-bumpy affair, with an occasional lurch and heel from picking our way toward clearer sailing – which was also in the direction of big, dark, heavy cloud banks lying ear-to-ear across the horizon. A six-knot speed was prudent as our edge of the Beaufort Sea remained strewn with icy hunks, none of which were large enough to host polar bears.

For a time, the ice thinned out enough for us to resume a more normal cruising speed. But, it didn't last. By 1600 we slowed due to the thick mantle of fog that settled on Laurier, which reduced visibility to perhaps 100 metres. A ray of sunshine would occasionally poke through the gauze to sparkle and reflect off the water. The ship's fog signal began to serenade our navigation through the ice chunks that now closed in all around us.

Around 1900, our climate again changed. The temperature was $+ .4^{\circ}$ (not a whole 4, just a decimal 4 – about the same as the sea surface) in 15-knot wind. The fog was gone and we entered a far-reaching and thick icefield. Between capes Lambton and Queenston, off the southwestern shore of Banks Island, we encountered ice that stretched farther than all eyes could see. This wasn't your run-of-the-mill arena-flat ice sheet. It was a mix of newer and older ice that piled up into rubble, which resembled the boulders and slabs left behind from the Frank, Alberta rockslide of yesteryear. And, some of it was tall – six-foot mounds, ridges or pinnacles in places. Looking out from over the welldeck's gunwale, some large icy sculptures stood above my line of sight.

There was no way around this icefield. For nearly four hours, Laurier chewed and crushed its way through – needing the power of all three main engines. Maintaining our course demanded constant throttle and helm adjustments. In these ice conditions, most directional control comes from the propellers rather than the rudder. To progress along our track, Laurier engaged the ice in a variety of ways. Here and there short fissures opened into channels that could be driven. At other times, floes could be pushed aside. But, in an icefield rated 9+ (the waterway being more than 90% but less than 100% covered in ice), mostly it was finding faults to exploit by pushing our bow into, and onto the ice. Sometimes the ship would slide back to wait for the effects of our effort to materialize so we could again go forward. When we did go forward, it was at about three knots.

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Working through thick ice using all three main engines can burn more than 1,200 litres of fuel per hour. By comparison, open-water cruising on one engine burns a paltry 278 litres per hour.

Just around the time we got to wondering if we'd see any more polar bears, a mother and her two cubs appeared off our starboard bow. Unlike lone males, who take their time looking and sniffing before they saunter away, this mother checked us once, then fairly galloped away with her young charges in hot pursuit. She often looked back, but seldom slowed her pace – except when the cubs lagged. When they reached the edge of an ice floe, there was no gently easing into the frigid brine – just a flat out, full-speed leap, with front paws and legs fully extended. When swimming, the cubs closed up as tightly as they could behind their mother.

Shortly before Ben's throttle arm went completely numb from constant use, we broke out of the icefield and into gradually-clearing water. Thereafter, each passing hour crossing Amundsen Gulf put us farther away from major ice obstacles. As the night passed, Laurier again found the rhythm that comes only with time spent in steady speed. All the lumps and bumps of this passage were gone, replaced by the warm and fuzzy memory of our time near mother and cubs.

GLOOM AND RADIANCE

ABOARD CCGS SIR WILFRID LAURIER

Dolphin and Union Strait.

Bound for Kugluktuk.

Saturday, September 08, 2007

Despite our two-day passage to Kugluktuk becoming a sedate cruise in benign conditions, many onboard still faced long days – some toiling, others waiting. When there aren't beacons to repair, the crew focuses on Laurier's needs. Besides the routines of inspecting equipment and systems, repairs are effected and some cosmetics are attended to. With Laurier being so busily multi-tasked year-round, opportunities for paint and polish are sometimes few and far between.

During this transit, the crew is also busy preparing the ship for the next group of scientists, who will join us at Kugluktuk. There is equipment to set up, rigging to arrange and endless things to move. Everything must be in place, ready for action when the science folk arrive, because their scheduled events are many in a short time. In contrast to the crew's bustling, our pilot and helicopter mechanic endure a very long stretch of waiting for their next call to flying stations. Being principally used to transport crews and materials to beacon sites, gaps in the off-ship to-do list make for endless days when their machine doesn't see outside its hangar.

Much of our +3°C day stayed dimly lit, under heavy cloud. The occasional patchiness seldom opened enough for sunlight to cleanly beam at us, although it often illuminated the clouds,

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seemingly from within. Later in the day, moist air spontaneously transformed into wet snow that got everyone's attention. While sporadic in its visits, it nevertheless reminded us of the season that lay close at hand. When the clouds finally parted, Laurier basked in a radiance befitting the bridge window's roll-up sun shades, which sent many folks searching for sunglasses that rarely were needed before now. For a few glorious hours one had the urge to ask for autographs from the Joe-cools bespectacled crew.

Into the evening, the sea flattened to extinguish any sensation of motion. The only real sense that we were continuing along our route – other than from looking out – was the steady, subtle vibration of machinery against ocean. At around 2100, Mother Nature rewarded the ship for prior weeks of fog, rain and wind by sculpting an awesome sunset. Far quicker than we wanted, the descending sun peeked, flickered and glowed behind, through and under the clouds until our sky much later faded to black. Sunset to sunrise is still fairly close together, but now our short nights are dark. While much of the ship slumbered, Laurier continued its lonesome voyage.

SUNDAY, SUNDAY

ABOARD CCGS SIR WILFRID LAURIER

Kugluktuk

67° 50' N. Latitude. 115° 09' W. Longitude.

Sunday, September 09, 2007

A month of mostly 17-hour days caught up with me this morning. After breakfast, for which I didn't really hunger, I closed my cabin's doorway drape (unusual for me), and stretched out to snooze for an hour or so. Later, I re-arranged myself on the settee and dozed off and on for several more hours. Good thing I set my alarm, because it was needed to roust me in time to freshen up for my Weather Network interview (makeup!). For the balance of the day, I kept a low profile. No photography or interviews.

It's easy to understand how a long patrol like this can affect a crew. During its early days, everyone is busy getting into the routines that weeks later can become mind-numbingly monotonous, in a strenuous way. Maybe it's the getting into a head-down, long-way-to-go plod that makes it possible to get up for a 12-hour watch, every day for six weeks.

My Sunday sort-of-day-off actually began last night, when doing my laundry suddenly became more important than writing another single word – although the motivation could have come from seeing most of my kit in the laundry bag instead of my locker (who really needs undies in the Arctic, anyway?). Between loads I processed a big batch of photos, which left me a bit behind in scribing. My reality: the countdown clock relentlessly resets itself every day.

The entire ship was quiet today. There were no flight ops or off-ship work, in contrast to the never-ending tasks that occupied the crew while we continued toward Kugluktuk. The

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outside day was pleasant, the sea only wrinkled, and from time to time the subdued ambient light brightened. The +2°C temperature reminded us where we are.

The long day underway presented opportunities to test several of the ship's operating systems, and contingency plans devised to respond to nasty occurrences – like loss of steering. We stopped to measure the response times of the emergency steering mechanism, then swung through the cardinal points to check the compass. Magnetic compasses are often unreliable in these northern latitudes.

After supper, a by-now familiar landscape and whirling two-bladed wind turbine came into view, heralding our approach to Kugluktuk's short waterfront sprawl. This being Laurier's third stop at Kugluktuk this patrol, the ship seemed to instinctively go to its prime anchorage spot. By 1845, Laurier ended its two-day crawl from Sachs Harbour and rested on its anchor.

For all its tough machinery, and in spite of the most comprehensive work schedule, all-steel Laurier still relies on its flesh and blood components to achieve its goals. Sick Bay gained more customers as the patrol wore on, mostly from injuries arising from the very physical work, plus a little illness here and there. Not all the hard effects on the crew come from this far-north exertion. Being separated – isolated, in fact - from family for long weeks takes its own kind of toll, despite the usually-available satellite email facilities. When bad things happen on the home front it isn't always possible to be part of the solution. Although most urgent calls can get through to the ship, when you can't do much about the events unfolding a world away the news can seem all the worse. Given the nature of the ship's work in mostly-remote locations, catching an emergency flight home might entail a several-day wait. Fortunately, when two of the ship's company recently had to head south, Kugluktuk's airstrip with scheduled flights was just around the corner.

WANDERING AROUND

ABOARD CCGS SIR WILFRID LAURIER

Anchored at Kugluktuk

Monday, September 10, 2007

Today ashore was entertaining, educational and disheartening. For three hours I walked the dusty streets of Kugluktuk, which follow the shore and stretch back onto the uplands overlooking the Coppermine River. The terrain is sandy and rocky, and the hamlet rises and falls through several gentle contours. In some respects, it seems more prosperous than most of our previous ports of call. Certainly, there are a great many more traditional vehicles – trucks & SUVs – competing with the maniacal ATVs for space on the road and in front of the Northern (store). It has a feel of near perpetual motion – people walking, ATVs hurtling, pick-ups cruising, plus the water and sewage duo on their endless give-and-take service to each building in the hamlet. At high noon, the intersection near the Co-op fairly filled with cross-traffic of every description.

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The entertaining portion of the day was thanks to an employee of the department of environment, who stopped his late model pickup on the roadside to speak with me. After conversing for a few minutes, he was explaining about how there are lots of pollution spills here – mostly from leaking residential tanks – when he suddenly looked nervous, mumbled something about having to go as he slammed the vehicle into gear and flew off mid-sentence. I hadn't before experienced that version of "No comment." He left me choking through his dust and chortling for some time afterward.

The educational part also came on the side of the road. It reinforced my belief that if you want to learn anything, get out of the boardroom and wander around – sooner or later something interesting will find you. In this case, it was someone who offered to take my photo in front of a local landmark, and who coincidentally knew all about the challenges of this hamlet – if not all of Nunavut. From him, I learned that the biggest problems to be solved in his part of the Arctic are education, economic development (despite numerous tourism opportunities) and healthcare. The kids won't care about getting a good education – or one at all – if the parents don't take a strong interest and give their wholehearted support. Doctors do come north, but some appear more interested in just making a quick buck to hasten their retirement or travel plans, than they are in practicing here – and nurses are sometimes in short supply. The community suffers under the exorbitant costs of getting trades people to come north for projects, a dilemma that could be solved locally with just a spark of motivation. Apparently, there are dollars available to send locals to get their trade qualifications – any and all trades are needed here. But, they won't leave the community to get the education – even knowing there are decent-paying jobs waiting for them at home as soon as they are qualified. Consequently, many projects – including basic housing – see materials delivered, and then wait a year or more until someone can be found to do the job. In the meantime, the territorial government continues to be the single largest employer for many, while other northern residents live off social programs.

The disheartening portion of today's program came in the form of children and teenagers who should have been in school. Instead, a small group of pre-teens wandered the streets pummeling everything in range with stones and rocks – street signs, buildings, satellite dishes and each other. Dozens of vehicles passed before one driver got out and put an end to their wanton destruction – which halted only until that vehicle was out of sight. More disturbing than the young demon seeds, were groups of teens who were so stoned or drunk – or both - that they couldn't walk without each other's help. A male, cigarette dangling from one corner of his mouth, kneeled and swayed on the ground until two equally debilitated girls helped him up. Then, together they stumbled into what had trappings of being a local drug house – loud music thumping out through its walls and three young people slumped over each other on the outside stairs. Barely one block away, four drunken teens were falling all over every minor obstacle in their path, as well as themselves – shrieking and giggling, and babbling incoherently (that wasn't anyone's native language). One girl, whose jacket flapped undone, had a large liquor bottle sticking halfway out of her jeans waistband. Did I mention that all this was happening at 11AM, virtually in the middle of a well travelled area, and that none of this behaviour got anyone's second glance? If the local police can't find any

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of that with both hands, then do they really deserve the donuts? Remember my theory about getting out and wandering around? There was no sign of the musical ride anywhere during my three-hour tour.

Returning to the shore to catch my ride back to the ship, feeling pretty disgusted at seeing what many here describe as an epidemic – the more cynical say it's just the way of life - an older man and woman in a boat personified the simplistic fix for wasted youth. After a 20-mile ride in their small open boat, the couple rafted to what passed for a dock. Then, with great effort they unloaded the ATV that was precariously balanced across their boat. After the quad, came the butchered carcasses of five fresh-killed caribou (one for their friend) and the corresponding hides. While those young folks wandered lost in vandalism and alcohol, these seniors filled the day with the work of sustaining their lives.

JUST PLAIN MEAN

ABOARD CCGS SIR WILFRID LAURIER

Underway in Coronation Gulf

Tuesday, September 11, 2007

The weather gods must read Laurier's to-do list, for it seems that we get the best conditions when there are no off-ship jobs for our crew to tackle. Like this morning - a near-blinding sunrise, negligible wind, and the temperature already a few notches above all-out woolies buoyed the spirits and elicited descriptive phrases from all who noticed. Add to that the bacon aroma wafting from the galley that woke me before my alarm went off, and the day just couldn't begin better.

Beauty is indeed in the eye of the beholder – otherwise the frightening pairings on south Florida beaches can't be explained. But, in our far north that cliché is a truism. Here, there are few majestic peaks to inspire, no wow-inducing blaze of fall leaves (in fact, no trees at all), and no steel and glass pinnacles of manmade ego. Horizons are devoid of any distractions, the Arctic vistas more vacant than the Trans Canada highway across Saskatchewan. Therein lay the beauty of this harsh place. Away from the lights and angst of the sparse settlements, and humans' left-behind debris, one is easily imbued with a sense that this place on Earth will never be filled up – that it will always be where a weary spirit is soothed, and a scattered mind refocused on that which matters. True, satellites bring CNN and reality programs, but why would you need them? It isn't necessary for us all to go to hell in the same hand basket. Here, in the land of the midnight sun and the four-month night, everything that is important is within arm's reach – and perhaps just a little ways over the next horizon.

Well, we're into it now. This afternoon our Eurocopter stretched its rotors on a few short hops to collect a science contingent from the Kugluktuk airport. Onboard, some of Laurier's crew had to relocate and share a cabin with a shipmate in order to accommodate the newcomers. As soon as the group was aboard Laurier, its members went to work setting up work stations and checking equipment. Their science program began almost immediately

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with a quick RHIB run up nearby Coppermine River to collect water samples. That waterway is shallow and broad, with flat-top sandbars barely awash. Here and there a bar appeared as a sudden smooth patch on the river's surface. Once the sample bottles were filled, by hanging off the bow of our slow-moving RHIB, navigation back to Laurier was aided by Harold's roast beef supper-in-the-making being upwind of us. The evening meal, its apple pie dessert, and a safety briefing for the new arrivals preceded taking up the anchor to begin serious deck work wet-testing several sampling devices. As soon as the gear was retrieved and stowed we got underway for the first of some 50 plots on our chart, where the ship will stop to collect samples of all kinds, around the clock for the next week.

During the equipment testing, to prevent it from fouling the ship, or vice-versa, it was necessary to maintain the ship in a steady position. As luck would have it, our dynamic positioning system – a.k.a. Ben – was again on watch when our station needed keeping. This time, it was more challenging with science gear suspended over the side – and 30-knot wind accompanied by rain and 6' swells with frothy whitecaps. The moment Laurier began thinking about jobs to do, the weather changed to blustery and overcast. Like I said, the weather gods can see our to-do list, and they're mean.

SEVEN

ABOARD CCGS SIR WILFRID LAURIER

Coronation Gulf

Wednesday, September 12, 2007

Hello fog-ness, our old friend. We've come to talk with you again. Yup, not quite down to the deck, but enough at times to warrant a few evolutions of Laurier's fog signal. Shortly after breakfast, the ship stopped at its first science station of this long, slow day.

The science group's presence altered our onboard routines in ways other than just doubling up crew cabins. Breakfast seating held a new dynamic - fresh people with whom to chat and virgin audiences for stories long exhausted on shipmates. And, the collection of current newspapers the newcomers brought from down south caused a veritable reading frenzy, there being no home delivery or online news service onboard. Sure, we have satellite television as long as we're stable enough to hook the signal, but you can't care if the critical tennis serves go unseen, or that you might catch only snippets of Lloyd and Peter doing their respective Nationals (is it just me, or was it better that way?).

Awhile after lunch, Laurier glided to rest in the lumps of Coronation Gulf to conduct an emergency drill – a pretend fire this time – and give our newcomers their sports day. Those of us who are, by now, seasoned hands did not have to squirm into an immersion suit during this sports day, like we pathetically attempted at the beginning of our voyage. Sadly, watching the science contingent wriggle into theirs wasn't anywhere near as entertaining as I thought it would be.

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Interviewed Eddy Carmack, Climate Oceanographer, Canadian Department of Fisheries and Oceans – and lead scientist for C3O (Canada's Three Oceans) project - based at Institute of Ocean Science, near Sidney, BC. Currently onboard Laurier.

Eddy Carmack's small science contingent presently aboard Laurier is part of the much larger Canada's Three Oceans project, of which he is the lead scientist. Their purpose over this next week is to collect water samples and other data from all across Coronation Gulf. To do so, his team, and Laurier's crew, will work around the clock to deploy and retrieve an arsenal of sensor and collection devices at some 60 predetermined locations. The reason Carmack's team is doing this work, is to help establish a baseline of knowledge about the physical and chemical properties of the water, against which future study can be compared.

The underlying need for this baseline is to help researchers understand how Canada's three oceans (their currents and water masses) are connected – how the waters circulate being the principal focus of scrutiny. That's not so simple, with freshwater currents moving on top of and differently from the saltwater that supports it. While some experts believe they know which way Arctic waters flow, there continues to be debate about it – and Carmack believes that conclusive evidence sufficient to settle the issue doesn't yet exist. So, why choose Coronation Gulf to begin sampling? According to Carmack, this is the headwater of the Northwest Passage.

Besides high-tech computerized equipment, Carmack's group is also deploying the ancient mariner form of communication. A dozen bottles with a message sealed inside each (a project of a Texas school class) are being chucked over Laurier's gunwales in hopes that far-off finders will reply, thus indicating likely drift patterns. Past bottle drops yielded a four percent return, from places such as France, Greenland, Ireland and Norway. The bottles are a low-tech test of the concept that near-coastal floating objects generally drift around North America in a clockwise direction – mostly caused by freshwater exiting the continent and turning right.

There are myriad, complicated, interconnected reasons for all this research, but in the end, it all comes down to one important purpose according to Carmack. "We want to answer the basic question of, what's a reasonable forecast of the future. For climate scientists, it's all about being prepared."

This project begun by Carmack's team might have a short life, as funding presently exists for only two years of field work. With so many other studies of Earth's likely future making forecasts out to the year 2050, this project is something that someone can pick up on and continue – and perhaps should – if ongoing money can be found. In the meantime, Laurier's on-watch crew has its hands full – literally – with navigating, equipment handling and station-keeping long into this Arctic night.

Today; Wednesday; Day 36; seven more sleeps for a crew that, overnight, filled with new-found energy and cheer. Suddenly, going home is a tangible thing, more real than wished

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for. During week five of their patrol, the strain of continuously pulling the load became evident in the demeanor of a sometimes somber and tired crew. But, today they know they've passed through the toughest part of their private marathons and that the freedom bird is near enough to talk about. Take time off; hang out with the kids; work a second job; enjoy nicer weather; look for other work; contemplate how many more of these trips are in them – all options are again possible. Seven more sleeps.

SHIVER ME TIMBERS

ABOARD CCGS SIR WILFRID LAURIER

Departing Port Epworth, Coronation Gulf

Thursday, September 13, 2007

This morning that exclamation had nothing to do with the -1°C temperature. Instead, we experienced the all-steel version of it when Laurier shuddered to a stop near Lawford Islands, in Coronation Gulf. While slowly proceeding through generally unsurveyed waters, the depth sounder suddenly showed the sea floor steeply reaching for Laurier's keel. At its closest, an uncharted pinnacle stood barely three patrol-threatening metres beneath the ship. The ensuing activity on Laurier's bridge was tense, as the captain executed delicate maneuvers to get to deeper water. For an additional margin of safety, one of the ship's RHIBs was launched to go ahead and take depth soundings along Laurier's intended course. In less than one hour we again floated on depths that really were, and resumed our plod toward science station #17. According to the quartermaster, "You nearly had a really good story."

Uncharted waters have been frequent features of the past five weeks, but it apparently didn't have to be so. In 1985, a Canadian ship was purpose-built for hydrographic survey work in the Arctic, but someone on shore changed its role. Consequently, the vital soundings were never taken, and 22 years later vast stretches on Canadian Arctic charts are bereft of essential navigation information.

Many of the Lawford Islands look like they were smooth-planed by relentless Arctic winds. Their northern ends, low to the water, gently rise up to abrupt-face high bluffs that define their leeward points.

Just minutes past the pinnacle we got a startling blip on our radar display. In these northern latitudes, few craft – boat or plane – are near enough to disturb the scene. But, our radar suddenly showed an aircraft-sized image just astern and to one side. Lots of horizon and closer-to-the-ship scans eventually revealed an enormous gaggle of geese, southbound, at a pace that quickly overtook our four-knot crawl. Geese, here, just before their long flight south for the winter are big and put-me-into-the-oven plump, seemingly the size of the famous goose landmark at Wawa, Ontario.

After supper, seven of us took flight in Laurier's Hurricane 733 (RHIB) for a ten-mile blast to collect water samples up the Tree River. The RHIB's 30-knot speed combined with the -1°C

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air temperature to make me happy for the extra insulation I'm packing from all of Herb's desserts. Powering across four-foot swells, we frequently were airborne as Pete nimbly worked the throttles to spare the engines and soften our landings.

In short order we entered Port Epworth, a wide, lengthy gouge into Canada's Arctic mainland that contains only an anchorage symbol on the chart. In marked contrast to the low-lying featureless islands of our first several weeks, Port Epworth and its Tree River are bordered by foliage-rich foreshore leading to hills and bluffs sporting sharp faces and craggy layers of rock – which also sparkled in places with a light dusting of snow. The Tree River winds upstream away from its bay terminus, narrows to a stone's throw width and shallows to much less than ten murky feet. Back at Sachs Harbour we could see our anchor through thirty feet of crystal clear Beaufort Sea, but here the water is a thick slate grey.

Halfway to our turn-around point we passed a Bull Moose foraging along the river's edge. The magnificent beast was tall, robust and sported a rack of antlers so immense that you could easily believe he was too wide to fit through parts of the valley. Farther upstream we stopped at a vacant riverside camp, comprised of plywood and tarpaulin cabins. It was overrun by ptarmigan that were slow to give up their territory to our intrusion. Later, while returning to Laurier, we had a much closer encounter with our moose. He was mid-stream on his swim across the river, on which he remained focused as we passed astern of him. Gaining the shore, he fairly leaped up the embankment, climbed clear and stopped momentarily to look back at us. Seeing that we posed no threat, he leisurely sauntered away into the undergrowth.

We were spared, or deprived (depending on your need for speed) a fast, lumpy ride home, as Laurier had followed behind and now laid waiting for us at Port Epworth. No sooner had we scrambled up the accommodation steps, and the RHIB was stowed, than Laurier resumed its endless course to more of Coronation Gulf's science stations. Some of the ship's crew was re-assigned to bolster the two principal watches for handling the round-the-clock science work. As we close in on the beginning of autumn, nights are now black dark by 2100 – and our breath is evident in the air.

PREPARE TO REPEL BOARDERS!

ABOARD CCGS SIR WILFRID LAURIER

Criss-Crossing Coronation Gulf

Friday, September 14, 2007

During the wee early hours of today, ghostly shapes briefly appeared in the upper reaches of Laurier's deck lighting. First, just one silently glided out of the inky blackness, soon followed by its comrades. For a time they seemed content to make close passes to observe the work being done on the ship's brightly lit decks, and in the water along its sides. But, shortly after 0200 their leader gave the signal – unheard by Laurier's crew – and the entire gaggle descended across Laurier's gunwale.

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Eight Canada Geese – looking a bit confused – landed and occupied our welldeck. A couple got trapped in the breezeway, and one thoroughly disoriented gander briefly tangled with the derrick rigging on our bridge's face. Eventually, the dominant male corralled his herd on the forward part of the welldeck, where they hunkered down for a rest. When the sunrise illuminated our -2°C morning, the uninvited passengers stirred and made a few practice runs back and forth across the welldeck. Satisfied with an escape route, Goose One led his gaggle aloft and over Laurier's gunwale to resume its journey south for the winter – hopefully to survive the hordes of Elmer Fudds waiting, shotguns in hand. If it's true that, where a goose goes nothing grows, then what that gaggle left on the welldeck should render those timbers barren for a long time. Slimy cleanup in aisle nine!

Throughout this frigid day Laurier steamed and stopped its way across Coronation Gulf, towing, dipping and sampling in the name of scientific knowledge. At every science station stop, Laurier's bridge and deck crew choreographed maneuvers to deploy and retrieve various probes while keeping the ship in a predetermined position – while researchers collected and labeled their treasures for later analysis, some of which will occur onboard. The strain of the work and the effects of the harsh conditions could be as much felt as heard in the crew's voices over the radio. Working full-out to complete such a time and weather-sensitive project, which doesn't always unfold as expected, breaks from the exertion are sometimes few and far between. Sometimes the term "long stay forward" doesn't just refer to the anchor chain's angle.

Those of us not focused on wires, gadgets and winches watched a glorious sunset evolve through fat, dark clouds. It glowed as brightly as all the previous sunsets of this patrol, but this time the light radiated a much cooler aura. Just over our shoulders, in a direction we preferred not look, a fast-moving rain squall systematically obscured nearby islands.

By 2330, the night air warmed up to a crisp +.5°C (no typo - not a whole five, a decimal five), made all the more sharp to the touch by 20-knot winds exfoliating the ship. The big steel shipping container chained on deck developed a frosty crystalline glow. For a time, snow flurries swirled the welldeck – enough to leave behind wisps of flakes piled against most vertical surfaces. Despite the chill, looking up had its reward. All above Laurier's lonely worksite in this farscape, billions and billions of stars twinkled and mesmerized from the depths of a Carl Sagan kind of sky. With the midnight change of watch complete, a new – not necessarily fresh – crew stepped in for its 12-hour turn at keeping the plan on schedule.

THE BLUES

ABOARD CCGS SIR WILFRID LAURIER

Underway In Bathurst Inlet

Saturday, September 15, 2007

I missed it. Sometime during the wee hours of sleep, my journey crossed its halfway point. I'm now closer to arrival than from departure. I'm not sure how I feel about it. I'm tired after five weeks and miss family and home, yet I'm looking forward to living in the midst of a new

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crew and experiencing their different work in what should be drastically different weather – and then there's the run for home across the top corner of the Pacific Ocean. OK, so I do know how I feel about it – awesome!

There doesn't seem to be enough time in any day, or in the remainder of this year's patrol, to get my work done. I clearly underestimated the volume of information and images that need to be processed in this target-rich environment. I'm hustling to keep current with each day, but by midnight every night I'm just barely breaking even – and never feel that I can go to bed with a clean slate. There must be a way to become more efficient, but my spouse wouldn't let me have an intern.

For the past few days, I've been wearing a sweater in my cabin as the colder outside temperature is affecting Laurier's insides – at least at my end of the ship. Even with my cabin heater full on, the temperature peaks at a fresh +15°C. Summer is over.

This morning began below zero, in fog and 25-knot wind. The 9' swells lifting Laurier from its port quarter made the ship heave and occasionally shudder. Rolling frothy whitecaps topped the swells, and sometimes streamed in the near-Gale. Soon into the frosty morning we were treated to a spectacular change of scenery. We've begun a long transit southward down Bathurst Inlet, which cuts deep into Canada's northern mainland. Early into the inlet we went through a slim passage in the Jameson Islands, barely two kilometers wide. The bordering bluffs, soaring some 400' above the sea made the opening seem menacing and narrower than it was.

After several days' hiatus, flight ops resumed at 0710, and stopped at 0712. Fast-moving rain squalls and veils of fog blew across the ship - closely followed by snow flurries. By contrast, some miles ahead of the ship bright sky was opening up and sunrays angled through the cloudy ceiling. Our helicopter launched as soon as Laurier's air space cleared, and took a science group to several sites ashore to study a phenomenon called Bathurst Ripples, and to find interesting rock formations. Spread across a vast expanse of this region, broad tracts of long serpentine gravel or earthen ridges run for kilometers along the ground. No one has an explanation of their purpose or creation. Most are raised and obvious, while some more subtle mounds can be seen only from the air.

When the scientists returned to the ship, flight ops took on a new purpose. With me in its back seat, cameras a-dangle like a tourist, our Eurocopter headed for Cambridge Bay – nearly two hours away – to fetch someone who was joining the ship early. We departed in clear, sunny and very cold skies. Within minutes we were flying some 200' over snow-covered Kent Peninsula. The 30-knot headwind buffeted our machine and reduced our speed over the ground to just 90 knots. The peninsula was rich in four-legged wildlife. We were barely feet-dry over the shore when we flew above a small herd of Caribou. Over the next half hour several herds of musk ox passed beneath our skids. Many lonely miles past the last herd, a big male musk ox stood alone, hindquarters to the wind, gazing over its empty, blustery and frozen domain.

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By the time we set down at Cambridge Bay airport (a fuel shed and a terminal-esq building) the temperature had fallen more, and the snow on the ground looked like it was settled in for the season. On the return flight, snow and fog closed in such that our following the peninsula's shoreline afforded the best visibility. Our earlier 30-knot impediment became such a kick in the pants that we fairly flew (sorry) back to Laurier in barely 45 minutes.

Safely back in my cozy, cool cabin, the day's fun continued. Barely into editing the day's photos, my brand new computer's operating system crashed into a blue screen of computer (and sanity) death. Suddenly, my cabin got a lot warmer!

METAMORPHOSIS

ABOARD CCGS SIR WILFRID LAURIER

Anchored. Head of Bathurst Inlet.

66° 21' N. Latitude. 107° 12' W. Longitude.

Sunday, September 16, 2007

All through the night Laurier continued its southward journey, following a long narrow passage below Baychimo Harbour and along the eastern shore midway down Bathurst Inlet. At pre-selected locales the ship stopped to deploy scientific instruments and nets to capture data and creatures. By morning the deck crew laboured in +1°C air, accentuated by a gentle snowfall. While science stations were probed through the chilly day, some researchers flew inland to collect water and rock samples.

The ship's rhythm continued until just past lunch when it reached a place of near-mythical importance. No dotted line or shore cairns mark where it bisects Bathurst Inlet – I looked. Only our GPS plot of 66° 36.6' North Latitude indicated that we sat directly on the Arctic Circle. There are few openings into North America that allow you to drive your boat across the Arctic Circle. This fjord of Bathurst Inlet is one.

A small cadre of Laurier's complement feared why the ship stopped so precisely. The rest of its company knew why. It was time for the dozen tadpoles (Arctic Circle virgins) onboard to face the court of King Walrus to learn if they'd be permitted entry into his realm and become shellbacks. And, that included me. Despite this being my fifth northern trip, it is my first aboard a ship. Consequently, my holding a Resolute Airport Order of the Grand MuskoX Club card didn't spare me from the ordeal, which ominously involved donning a hazmat suit. After being tattooed (actually, bingo-daubered), blindfolded, symbolically head-shaved, crawling through slimy buoy droppings (perversely gathered and saved by the crew months before), kneeling to petition the court, taking the pledge (not that pledge - we can still imbibe), and baptized under a bucketful of freezing water, we downed a hot toddy and rejoiced at our metamorphosis. So, now I'm a shellback and a muskoX – and for awhile smelled like both. The ship's hot water supply took a serious beating during the ensuing hour.

Eric W. Manchester

Nothing stimulates deck work like a good metamorphosis, so off we went to continue our journey south to sample the marine environment. At day's end, we devoured a barbecued feast of steak and lamb on the aft deck, surrounded by the vista of this inlet – suitably white-fringed befitting the 0°C evening.

Tonight we anchored at the head of Bathurst Inlet. I've never been to this place before, yet I've always been here in my soul. For many miles I watched its snow-dusted hills rise up hundreds of feet and close in against Laurier's southbound voyage. The temperature dropped, snow flurried across us and the depth became shallow until our mighty ship could go no farther. We arrived to a barren, other-worldly landscape that is so characteristically northern Canada. It is desolate. It is lethally harsh. It is beautiful in ways that warm from the inside out. This place jutting into our nation's north shore overwhelms the senses, fosters hushed awe, and spreads out in all directions so immense that humans are put into their proper diminutive perspective. It dares us to grab a handhold of survival – to be here until we cannot – all the while begging us to leave and tell no one what we found. Here, I am far from where I live, yet I am home – in a place that is so perfectly more significant than all our so-called civilizations. Life is crystal-clear and simple in this Arctic landscape. No need to strive for yet another car in your garage. All that matters is that you live, and expend your energy to that goal and for none that involves gold cards, SUV's or the latest of anything. Don't worry; be happy – unless you're a tadpole.

MAKING SOMETHING FROM NOTHING

ABOARD CCGS SIR WILFRID LAURIER

Bathurst Inlet

Monday, September 17, 2007

This was a nothing morning - zilch, naughta, ain't nuthin' there, zero. As in, yes we have no degrees. The 0°C morning chill didn't wear off with the rising sun, and the 10-knot wind reminded us that cold and flu season is just around the corner. We have a long way to travel over the remaining days of this patrol, and Laurier wasted no time getting underway. While we've been working toward it for the past 40 days, today marks the start of the one transit that everyone has been thinking of – the one with their going home at its end.

The day was filled with cruising and stopping for science casts, framed by Bathurst Inlet's balance of hills and water depths, each reaching for their respective 1,000' marks. Navigating this fjord-like waterway is not simple. There are long straightaways punctuated with islands, underwater obstructions and enough twists and turns to make it interesting. Part way out of the inlet, near the mouth of the Burnside River, we anchored at the community of Bathurst Inlet. Here we collected samples and slung in navigation buoys for the locals to install and maintain.

For a couple of nippy hours I hiked around the enclave – it's too small to be called a hamlet. I'm pretty sure that I met the entire population, whose main interest this day was going out to visit Laurier. On being told they could go aboard, few waited for our RHIB to collect them,

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opting instead to pack a local boat and run themselves out. As has been our experience at every previous port of call, a popular stop during a visit to Laurier is its canteen – especially since their annual resupply barge hadn't yet arrived.

I'm told that the community of Bathurst Inlet was begun in the 1920s. Its population grew to be much larger than today's 13 Inuit residents (eight adults, five children), thanks in part to trading and an abundance of muskox and caribou. It is a fairly tidy collection of a couple dozen red-on-white cabin-sized homes (many of which are vacant), a few small geodesic dome-shaped residences, a large herd of howling and wailing dogs individually chained around the residences, a lodge that operated four weeks this year (mainly for tourist birdwatchers), and a 2,000' gravel airstrip (able to handle Dash 7s). Thanks to its discovery of down south conveniences and technology (got internet and television this year), the settlement also sports a big, continuously-running generator and satellite dishes sprouting from most homes. Juxtaposed against that array of 21st century life are racks of drying Arctic Char, caribou and collections of antlers and skulls. There are no wells or septic fields. Instead, drinking water comes from nearby Burnside River, and human waste is bagged for dumping on an adjacent island across a narrow channel from the homes.

The community's church is similar in design to ones found in most settlements across the north, which in earlier times were rich in innocent souls to religiously terrorize into civility. Today, the building looks pretty much unused with a pile of stored kayaks filling most of the space. Its spire and bell still stand as testaments to the white man's insatiable hunger to expand empires, to insinuate their ways into long-established cultures and to tinker with other people's lives. Judging from names on the crosses being overgrown at the nearby cemetery, the clerics had a successful business going for awhile. Glaringly out of place in front of traditional native surnames, are European Christian names (my point exactly) – Mary and John being popular choices.

Cemeteries hold a certain fascination for me, regardless of the names on the markers. They evoke conflicting emotions – sadness for the end of an existence (especially so with lives taken young), yet a spiritual uplifting at the proof of lives lived – especially so in this rugged, beautiful place. How I long to know the story of Mary Anaviluk, whose mortal life concluded here seven decades ago, her plain white and weathered wooden cross being the oldest dated memorial. On average, one resident per year was laid to rest on this gentle rise, eternally overlooking a quiet valley that sweeps away between river and snow-dusted low mountains. Judging from the unusually large collection of like-dated crosses, something very unpleasant happened here during 1941. Near where loved ones are remembered, crosses and other markers venerate beloved dogs.

Although Allen Kapolak isn't as old as the other northern residents with whom I spoke about climate change, he knows firsthand that important things affecting his community's survival are now different than before. Most troubling for him is that Caribou herds are leaving the area earlier in the year because the spring thaw now comes sooner than in his not-so-distant youth.

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Our afternoon high temperature matched our morning low of 0°C, but it felt much cooler blended with 20-knot wind (yeah, but it's a dry cold!). Snow flurries came and went, then swirled around for another look at bright red Laurier steaming away from its lunch-stop at Bathurst Inlet community. Before we departed, our ship's radio brought good news for Allen's family and friends. The tug hauling the community's three supply barges was due to arrive in just a few hours, bringing with it an entire year's supply of everything – including 50,000 litres of fuel. With just once per year delivery, that's a shopping list you don't want to get wrong.

In the fading light of our Arctic evening, while Laurier stopped for more probes of the deep, several scientists loaded into a RHIB for a quick ride to Mamingkatok (Baychimo Harbour), near the mouth of Bathurst Inlet. There, they wanted to make first contact at what is reportedly one of the last remaining traditional Inuit settlements (if you don't count the ATVs and skidoos we found there). Anecdotal accounts suggested that, despite there being a collection of dwellings, this settlement was home to just one inhabitant.

Upon arriving, the RHIB pushed its nose against a suitable boulder (there being no dock – there's never a dock) and we all clambered onto and over the rocks to discover lots of residents – but, Clarence was the only human among them. All the others were dogs chained (they're always chained) beside each of the small houses. It really is a dog's life, in the worst way. While the breed does belong and thrive out of doors, most live a hungry life on a short chain. Each dog displayed its unique personality. Some were aggressive. Others cowered. And, some leaped and jumped - and tail-wagged so hard that it threw them off balance – all the while exuding an attention-begging expression on their chiseled faces. We asked Clarence if dogsleds were still used, and he said not much since skidoos came on the scene. But, he still prefers dog teams because dogs don't breakdown. That prompted the obvious question – why, then do people have all these dogs, to which he just shrugged. As it turns out, Clarence is the only resident at Mamingkatok for a good deal of time, mainly when the others are out on the land hunting, but he is not the solitary, hermit he was conjectured to be.

Besides the dozen of newish-looking cabins, Baychimo Harbour sports the same broken plastic-and-wood kids' slide and swing set that we've seen before in many other Arctic communities. Makes you wonder who got rich off that idea. The settlement has no regular source of electricity, but since it can now pick up satellite television signals (no internet, email or computers); a small portable generator sits between two homes. What about climate change in this locale? Clarence says that winters now don't have as much snow as they once did – but he thinks he might like that, although it could interfere with his friends continuing to ride their skidoos all the way to Cambridge Bay as they do now.

We returned to the ship as the day's last light ended, all the while discussing the merits of having Bathurst Inlet declared a marine protection area, as opposed to it being developed

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into a deep-water port for yet another environmental calamity-in-the-making. So, I wonder, how could someone go about making that happen?

When Laurier picked up its RHIB, it resumed connecting the science station dots as it closed the homeward bound distance to Cambridge Bay. My computer has been revived, rebuilt, refurbished and reviled about as much as it can be without actually hitting any key to continue (with gusto or a blunt object). I don't have all the software as fully functional as before the crash but I'm able to keep going, even taking into account a couple of developing camera issues. With less than half the trip remaining, I have more than half of my equipment still working. When I think about it, that's pretty much what I tell my doctor.

WHATEVER FLOATS YOUR BOAT

ABOARD CCGS SIR WILFRID LAURIER

Dease Strait

Tuesday, September 18, 2007

Today was a mild +4°C, slightly warmer than the sea surface. The sure telltale that we're near wrapping up work on this leg was the bright, clear, sunny sky hovering above Laurier all day.

During an afternoon science stop in Victoria Island's Byron Bay, we watched in horror as a brand new catamaran powerboat foundered with a loss of all hands. Early on you could sense it was in trouble. Despite there being only a minor swell, the vessel's starboard hull dug in a bit, causing water to cascade belowdecks. It rose to meet the next wave and almost made it over, but the shifting additional weight of the water already shipped caused the craft to become unstable – and its port hull briefly submerged to let in more of the sea. It became apparent that it was now caught in a death cycle, a slow-motion roll from side to side – each roll taking the decks farther beneath the water. When its engine room flooded and killed its propulsion, the little boat was doomed. Writhing to stay upright, it gradually rolled onto its starboard side and ever-so-slowly slid forever beneath the waves.

Not since the Hindenburg hit New Jersey has a crowd been so traumatized – oh, the humanity - and the cheering - and the laughing by all, except for the builder of the ill-fated model boat. So concluded this year's running of the Royal Arctic Yacht Club's Arctic Seas Regatta. Since the beginning of this patrol many of Laurier's crewmembers spent off-duty time designing, constructing and keeping secret their model boat to be raced in this annual event. The rules were simple – boats had to be made out of paper or cardboard; could be powered by sail or engine; but were prohibited from using nuclear, rocket or methane fuel. Seven boats competed, one was lost, and all had fun. With the festivities and the work for this site complete, we resumed our quest for Cambridge Bay.

The next bit of excitement involved a real ship. Just after 2000, Laurier shuddered and rumbled as its big blades tore at the water in full reverse. The strain in the voice paging the captain to the bridge gave a clear, unspoken message that this was not a scheduled halt.

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Near a planned science station along the edge of Dease Strait, where the chart indicated 30-metre depths, that waterway's bottom suddenly reached for ours. By the time Laurier's single-engined emergency stop brought the ship to a standstill, an uncharted shoal lay barely one metre below its keel. One of our RHIBs launched with the chief officer to take depth soundings near the ship, and in short order determined the extent of the submarine hazard. A short distance ahead there was not enough water to float our boat. Discussion ensued among the bridge officers as to whether Laurier actually touched bottom, but no one reported a definitive impression of the final moments of the ship's approach to the shoal. Generally, it was felt that no contact occurred, and the various depth sounders' readouts agreed. Getting out of this shallow spot was easier than our earlier close encounter. Here, the captain gently backed the ship away from its brush with mountains of paperwork, and then spun it around toward deeper water. The planned science station was re-plotted to coincide with our new position, the samples were collected, and we resumed our journey.

The evening sky radiated a rich gold hue from the cloudless sunset. The warm tones of its afterglow illuminated our +1°C sea surface but didn't take the chill off the freezing air. With no flying or off-ship work this day, it's no surprise that we sailed under a brilliant sunny sky – recall my theory about the weather gods. But, the climate today is of little interest to the crew. All that matters is how good the conditions will be tomorrow – but, it really only matters during the time their freedom flight home needs to arrive and then depart Cambridge Bay.

Through tonight we continued working the science stations toward Cambridge Bay (Victoria Island), and by morning we should be anchored there. In the meantime, there are reports to finish, accounts to collect, and the length and breadth of the ship to scrub in preparation for handing off to the next crew. The final bingo game of this leg was played out, with no apparent injuries to the combatants. And, with no religious significance, we gathered for the last supper – well, the last one that Harold will cook on this patrol. It was pizza night, featuring more choices than the menu looked roomy enough to explain.

By now the crew is downright joyous. Less than 24 hours remain in their six-week workday, which spanned several thousand kilometers of Canadian Arctic waters and included countless beacons climbed and repaired, six ports of call, numerous school presentations, a phalanx of buoys deployed, hundreds of visitors hosted onboard, three SAR sorties for the helicopter, one aerial collaboration with authorities to nab some illegals, and many dozens of science stations probed.

Tonight was restless throughout Laurier. Suddenly, it came down to just these last hours in which to do everything that we thought there was loads of time for only six weeks ago. Focus turned to packing; turnover notes for incoming counterparts; conversations stretched out to prolong connections with shipmates; laundry to finish; a drink to share with an off-duty colleague, recounting highs and lows of the patrol, exchanging photos all around, and lengthy soaks in the hot tub by folks who didn't dip all trip.

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Then, after midnight I saw them, and felt them, as I never thought I would again. Swirling, sweeping, streaming – in long undulating bands and thick pulsating banks – the Northern Lights stretched fore and aft as far as I could see. The colours so brightly danced that they illuminated the sea in long wide boulevards running toward and ahead of our ship. For longer than the chilled night air was comfortable, several of us silently stood on the flight deck quite literally mesmerized by the surreal visions, vivacious above. The crystal clear sky's limitless depth was stuffed with the diamond-like sparkling of uncountable stars – which served to vividly reinforce our species' insignificance. Laurier continued to carve its way through a smooth black sea, undisturbed by the light night airs. I saw them, and felt them, as I never thought I would again.

SEPARATION ANXIETY

ABOARD CCGS SIR WILFRID LAURIER

Cambridge Bay, Victoria Island

Wednesday, September 19, 2007

This morning Laurier shone brighter than the dazzling sun alone could cause. It's just a theory – sort of like my weather gods thingy - but I'm sure the ship's added luster came from the crew's smiles and silly grins, which spontaneously erupted as we laid out our anchor in front of Cambridge Bay. For, we had arrived. Just out of sight, over the settlement's skyline and contours, lay our retiring crew's relief and its only way home. That is, when the charter flight from down south arrives – which it yet had not, and would not until later than the homeward bound guard hoped.

In sharp contrast to our arrival August 8th, this crew change would happen in weather conditions so stunning that it pretty much dashed my earlier weather gods theory. To be sure, the -2°C air was brisk, but the sea was flat, there was no wind to speak of, and the sun was so bright that even with sunglasses one was inclined to squint.

Whether it was an insult or a peace offering is unknown, but, on arrival at Cambridge Bay its surface was glazed over with a thin skin of ice. After six weeks of our icebreaker having little to break, the last mile of this Arctic patrol was spent slicing through what barely amounted to pond scum, sending broken shards skittering across the harbour's crusty face. The frosty air and frigid water conspired to knit the ice together strongly enough to withstand Laurier's low-speed bow wave by just crinkling and bending with its gentle undulations.

By morning coffee break, mounds of luggage and supplies bound by cargo nets littered the flight deck, ready to be slung over to Cambridge Bay's airport. Before lunch, crewmembers frequently detoured past the posted flight manifest, double-checking which helicopter lift they were on. At 1300, crew change began in earnest, which to the casual observer might appear chaotic, but, there is a carefully choreographed method in the apparent madness. First, the Eurocopter transports deckhands and an officer to a staging area at the airport. Then, wave after wave of crew – four at a time – are lifted off Laurier to the staging area, interspersed with those jam-packed cargo nets. When the incoming crew is ready, the

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helicopter flies loaded both ways between ship and shore, until each crew is standing on its respective side of Laurier's work schedule.

When most of the homeward-bound crew was gone, and before the new one began to arrive, Laurier fell more silent than I thought possible, shrouded in a deep palpable loneliness. For a time I felt as though I was the sole inhabitant – so very alone – on the ship. I knew this was coming. Since my project onboard spanned nearly three months, I even planned on saying farewell to one crew and getting to know another. But, it was the suddenness of separation that I hadn't contemplated. Everyone was gone – the faces, the laughter, the predictable and surprising behavior of my close-quarters shipmates for the past six weeks – all vanished in a few blinks of my colour-blind eyes, with barely the chance for good-byes. The finality of my loss came over the ship's radio, when the voices abruptly became new and unfamiliar. Laurier had regained its occupancy, and they are strangers.

Strangers? As in, a new audience? As in, haven't yet heard my war stories? Cool! This could be great. Out with the old, and in with the new. Kinda like divorce and remarriage but getting to keep all your stuff. Well, good riddance then. I'm good to go. On with the show....

I hope they all get home OK. Good-bye!

LEARNING CURVE

ABOARD CCGS SIR WILFRID LAURIER

Anchored at Cambridge Bay, Victoria Island.

69° 06' N. Latitude. 105° 03' W. Longitude

Thursday, September 20, 2007

Our morning temperature of -6°C barely increased during the entire day, made cooler (but not in a really cool way) by the ten-knot breeze ventilating a heavily-overcast sky. The sea surface temperature reached nearly +2°C. The thin ice that yesterday surrounded CCGS Sir Wilfrid Laurier is now pushed up against the shore. Traces of snow decorate the ship and its lifeboat.

So, what did we learn during our last six weeks floating around the Arctic?

SHIP'S WORK:

Our captain said this is the least amount of ice he's ever seen in the Arctic. Two years ago Laurier spent two solid (no pun intended) weeks in serious ice – and rescued two boats that were beset and in trouble. In an earlier year, they spent a good deal of their patrol just escorting commercial shipping through the ice between Kugluktuk and Cambridge Bay, in an almost-endless loop of return trips. This year, wind and fog were worse than in any previous years in memory, so much so that it often interfered with the ship's work. Despite the weather, Laurier's crew lopped off some 30% of the tasks on their five-year to-do list. And, shore erosion is becoming a significant problem at many locations, which threatens

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communities, homes and navigation beacons. At one site we repaired, the bank had receded some 15 feet since last year, jeopardizing that beacon's supports.

HELICOPTER FLYING:

The biggest challenge facing flyers in the Arctic is the weather. You really have to keep an eye on it because of how fast it can change, and how nasty it can get. An equal challenge is the complete lack of maintenance resources nearby. If something breaks, getting parts is a major undertaking. And, while this patrol has been relatively problem-free, in previous years rotors and a transmission had to be replaced while onboard the ship. In six weeks our helicopter logged some 60 flying hours. It wasn't a heavy workload, but an essential extension of the ship's capabilities. The Eurocopter is important for crew work, medevacs, SAR calls, off-ship science projects and during icebreaking it is a critical set of long range eyes – and this model of helicopter is particularly suited for its role. Reportedly, it has the strongest landing gear of any helicopter – especially important for rough-seas landings on a heaving flight deck. Its cargo compartment is phenomenal in its amount of space and weight-capacity – few helicopters can carry full sheets of plywood in their trunk. The machine is highly responsive, handling like a sports car – and if you saw how tiny the flight deck looks on approach, you'd really appreciate how important its nimbleness is. Just behind the hangar the airflow changes and sucks the machine down onto the deck, which means you reach a point in your descent where you're landing – like it or not. On approach, pilots try to keep open an option to overshoot at the last minute – it being better to go into the sea than crash on deck. For the occasional longer-range sortie, the helicopter relies on strategically-placed caches of fuel, which is used by coast guard, RCMP and is available to anyone in need. Every two years, the cached fuel is refreshed. The 1985-vintage Eurocopter is powered by twin 840hp Allison engines, and requires two hours of maintenance for every one hour of flying. Its biggest nemesis during Arctic operations is saltwater corrosion – even relatively calm days can stir up saline-rich moisture that invades its workings. With just one mechanic accompanying the machine for its Arctic sojourn, major repairs take on much larger proportions. As an example, should a transmission need replacing (which has happened before), the job takes two mechanics some 60 hours in a big, roomy, well-equipped shop – as opposed to the ship's cramped and sometimes very cold hangar.

SCIENCE OBSERVATIONS:

Winters are some 8°C warmer than the 30-year average. Farther south, the warmer weather resulted in the tree-line moving uphill to higher elevations than ever. Glaciers are receding at unprecedented rates.

Based on 30 years of satellite-generated observations, 2007 is the all-time record for shrinkage of Arctic sea ice; most of that shrinkage occurred on the Canadian side of the Arctic; and, open water now exists just 500 miles from the North Pole. The water flow through the Bering Strait into the Arctic is essentially a one-way current, bringing in the warmer Pacific Ocean water – which affects the rate of ice melt. The water from the Atlantic Ocean mixes with its Pacific counterpart in the Beaufort Gyre (a body of water slowly circling in the Beaufort Sea), then returns home via the Northwest Passage. Computer models can

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guess at, but they don't know, the outcome from all the changing influences. We do know that Canadian Caribou herds are declining. At the other end of the planet, Antarctica's ice is melting at its edges, while its centre is thickening due to an increase in precipitation – but they don't yet know what that means. International Polar Year involves 63 countries (including Canada) and some 50,000 researchers.

HEALTHCARE ONBOARD:

Laurier only carries a medical officer on its Arctic patrols. During the rest of its busy year along the British Columbia coast it relies on those crewmembers who are rescue specialists to handle medical emergencies, since the ship is usually nearer to shoreside facilities. Since there is no easy access to medevacs in the Arctic, a nurse practitioner – who can diagnose and prescribe – is needed to attend to emergency and acute care needs of the crew. But, despite having a phone link to physicians down south there are serious limitations on what the shipboard medico can do – no x-rays or blood work, and the most sophisticated equipment available is a portable defibrillator (and the ship's helicopter). This patrol was medically quieter than some others, although barely one hour into this patrol our medical officer had to deal with a real, potentially-lethal medical emergency. There were more industrial injuries (sprains, cuts), aches, pains and muscle strain due to the nature of the work. Laurier works physically harder than some other ships because of its extensive beacon repair duties. One challenge the ship's medical officer must also face is the often stoic resolve of crew to not take time off that results in their mates having to pick up extra work.

HEALTHCARE ASHORE:

Staffing medical jobs can be a big problem in the Arctic. Despite wages of up to \$83,000 per year (plus northern allowance), community health nurses are hard to get because, reportedly, that salary might only be a couple of percentage points more than they can get down south. Efforts are being made to encourage the locals to become qualified, and to bring courses to the north. As with other trades training opportunities here, many northern natives don't want to leave their community even to get employment-guaranteeing training. Doctors are reluctant to come north and lose their close connection with medical technology and city lifestyle. Diabetes and obesity are growing problems in the Arctic. There are fewer heart problems than in the south, but that is getting worse. Many health problems are emerging because of the locals' addiction-like fondness for the white man's junk and/or real food diet, which is loaded with everything that is bad for anybody. Cambridge Bay's hospital (built 2005) is nearing the end of its evolution from a typical northern health centre to a 40-staff regional lab and acute-care hospital. When the hospital is fully operational, expectant mothers will no longer have to go south (often alone) one month prior to their due date, and then give birth without family nearby.

COST OF LIVING:

Living in 1,500-person Cambridge Bay, the largest community on our route, is expensive. Rent for a small two-bedroom apartment can be upwards of \$1,700 per month, although electricity, telephone and internet costs are reasonable compared to the south. It's the

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grocery cost that causes seizures. Filling a single plastic grocery bag like the millions you see at home can easily cost more than \$100.

And those are just the highlights. The rest could fill a book. What a great idea - does anyone know a good publisher?

CRIME AND PUNISHMENT

ABOARD CCGS SIR WILFRID LAURIER

Anchored at Cambridge Bay, Victoria Island.

69° 06' N. Latitude. 105° 03' W. Longitude

Friday, September 21, 2007

At -2.4°C, today's beginning of autumn is warmer than yesterday's last day of summer, although the water's frostiness (+1.9°C) doesn't inspire swims or dips. A heavy overcast sky is full of a 12-knot wind that keeps Laurier's flags crinkle-free.

The crew busied itself with chores preparatory to the upcoming science work. Cables, equipment and rigging spread across the welldeck and in the hold - either getting ready, being used or rigged for stowage. No opportunity for toil was overlooked. True to theory, as the work went on the weather deteriorated, sending cooler temperature and stronger wind to test the crew's toques and insulated coveralls. This crew has twice the number of females than the previous one, working in all of Laurier's departments – bridge, deck, logistics, health, engineering, accommodation and food service.

Cambridge Bay's only pier was the scene of perpetual motion. Machines and people hungrily unloaded the town's annual resupply barges, against which the flat-bottomed tug that hauled them rested. At other settlements we visited, the residents voiced concerns about their barges being late this year – hoping they would arrive with vital supplies before winter water stopped the tugs.

I met the replacement crew retained to sail Norwegian-flagged SV Berserk out of Canadian waters. This is the boat whose crew recently ran afoul of at least two Canadian agencies, with their wanton disregard for our petty preference that foreigners check in and say hey before cutting across our yard. After Laurier's helicopter aided RCMP to locate and arrest the remaining crewmembers still at large, the whole lot of miscreant Vikings were tried and impaled in the town square. Ok, they weren't impaled but they were scolded and told to write out a hundred lines about how they'd never darken our fabled Northwest Passage again. Actually, they were chucked out and had to hire some sailors to retrieve their boat. So, Norwegians Christian Loken and Christian Nadroe waited for two others to arrive before setting off non-stop for Nome, Alaska where they plan to haul out Berserk for the winter.

Speaking of muskox, reportedly Cambridge Bay hunters have it easier than most. Apparently the shaggy, smelly beasts like the foliage near town and migrate toward it in droves. Once per year, hundreds are culled from the herd (culled, shot, as in a permanent reprieve from those pesky in-laws). I'm told that if they aren't processed quickly after being assassinated the meat isn't as saleable, so only those within a 35-minute drive to the slaughterhouse are seriously culled. Who knew muskox could drive? Besides, wouldn't the gunfight pretty much take the fun out of hitting the open road in the old Roadmaster? I'm just saying...

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THE MEANING OF...

ABOARD CCGS SIR WILFRID LAURIER

Steaming Through Dease Strait

Bound For Tuktoyaktuk.

Saturday, September 22, 2007

It wasn't the -1°C temperature, further chilled by a persistent 10-knot wind, as much as the overcast sky, so heavy-looking that it couldn't possibly stay up there, that made you believe it was later than the start of autumn. When light snow began at 0930, which briefly accumulated on deck, and stayed on the ice-covered corner of the bay, it seemed time to dig out the words to White Christmas.

After swinging on the pick in front of Cambridge Bay for three extra days awaiting our load of researchers, Laurier got underway at 1800 headed west for Tuktoyaktuk. Our original itinerary called for an eastbound jaunt to pick up the buoys in Simpson Strait before winter water hardened, and then begin a science crawl toward Alaska. But, that plan changed with our time lost at anchor. The buoys will be left in place for the winter, which they're unlikely to survive. It will take us nearly three days of non-stop steaming to reach Tuk to begin the science work.

Our helicopter pilot flew a few roundtrips to the Cambridge Bay airport to collect the science contingent and their gear. The forecast between here and home is for very little flying, and an equal amount of ice.

We have a large group of researchers onboard from Japan, USA and Canada, here to study what's below the waves and the birds above. Consequently, only three berths remain unoccupied, and the ship went from feeling restful and quiet, to being overrun – especially at meal times. For the first time in my nearly seven weeks onboard, I have a room-mate.

Less than two hours out of Cambridge Bay, we encountered a ragged, loosely packed ice field in Dease Strait. It was more of a white and blue-ish debris field with bits and chunks – and the odd slab bigger than Laurier. Most of the ice showed on the radar screen, but there was no assurance that it all did. In light fading to darkness, the quartermaster took the wheel in hand to steer around what would have gone bump in the night. Fortunately, highways and alleys opened in the right places to permit the ship to retain its 11-knot speed through many series of course changes. An extra lookout was posted, and together with the 3rd officer, captain and quartermaster she strained with eyeballs and binoculars to see a way ahead.

Last light comes earlier now, around 2000 – thanks in part to the season, and tonight's leaden sky. The icefield didn't last long, and Laurier's swerving and curving settled into a westbound straight line travelled at 11 knots. With lights and instruments dimmed or extinguished, the bridge takes on a battle posture. Peering ahead through the inky blackness, all that can be seen is the ship's bow-wave frothing away on both sides, the

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radar's shadow sweeping the welldeck, and the forward-facing glow of the masthead light flickering into the snowfall. With real visibility barely past the bow, only the radar's continuous rounds provide comforting evidence that we are alone on this waterway.

Again having a science troop aboard reminds us of the other reason for this patrol and the knowledge that is sought. What changes are happening to the planet and its living population? Are they all linked to the global warming topic that pervades most conversations? Is global warming a mankind initiative, or has there always been a naturally-occurring boom-and-bust cycle as part of everyday life on Earth? Perhaps most importantly – and troubling - what does it all mean for our collective future? All good questions, to be sure. Trouble is - which aggravates and confuses the public and sends the media searching for sensational headlines – no one knows any of the answers for certain. So, on we plod gathering samples, taking measurements, making observations and talking with the oldest people we can find – hoping that sometime soon there will emerge a clear, explainable pattern with a definitive cause. Mankind's predilection for instant gratification is seriously frustrated by the reality that fact-finding can need a half-century of records before it becomes informative in any meaningful way.

Yes, Earth's climate is changing in significant ways, and many of its creatures are behaving differently. But, what most researchers tell me is that no obvious connection between those changes and global warming yet exists – nor is it conclusive as to whether the changes are part of the planet's natural life cycle, solely as a result of human activity, or both. But, since we already know that mankind's footprint on our earth is toxic there's plenty of reason to clean it up. The eco sales pitch used to focus on doing the right thing for the sake of our grandchildren – which was a hard sell to people who only cared about their own selfish short existence – but now anyone who cares to see will realize that serious things are happening in the speed of their own lifespan. You'd think that causing one's own demise or growth of a third foot would stir more folks to action.

During the past two centuries, Earth has warmed and cooled several times. A key indicator of where our future is headed will be when – or if – global cooling follows the present warm spell. In the meantime, Arctic wind patterns have changed enough to notice and affect ice movement. On the Canadian side, we see much more wind from the north – which is one of the reasons that some mariners and researchers up here don't think that we'll see an open-water Northwest Passage year-round (more ice blown in to choke it). And, the Black Guillemot (bird) has changed how it lives. Normally, it nests ashore and feeds along the sea ice's edge. Thanks to receding ice, the bird has to fly longer distances to feed its chicks, which resulted in it changing its diet supported by different food sources closer to its nest. Consequently, observers believe the bird is not doing so well on its new diet, which could have long-range consequences for the species.

Things are changing more rapidly in the Arctic than in Antarctica. While the north is experiencing unprecedented rapid ice shrinkage, southern ice has slightly increased in area.

Eric W. Manchester

What does that mean? This is me shrugging my shoulders, along with some of the scientific community.

The abnormally-high volume of fog that shrouded Laurier during my first four weeks onboard was caused by the big, horseshoe-shaped area of high pressure that parked uncharacteristically over the Canadian Arctic; which resulted in long periods of clear sky; which let in more sunlight to heat the sea surface; which led to more evaporation; which was trapped close to the earth's surface by the high pressure that started it all. Simplistic? To be sure, but it illustrates how difficult it is to pinpoint cause and effect relationships when the slightest nuance affects so many things. I have no idea what effect all that fog (and its accompanying high winds) had on area wildlife, except that it really annoyed our shore parties who had to work through it and be late for meals.

PEDAL TO THE METAL

ABOARD CCGS SIR WILFRID LAURIER

Dolphin and Union Strait

Sunday, September 23, 2007

Today was a just-get-there kind of day, steaming non-stop since leaving Cambridge Bay yesterday – still with more than a day's worth to go. This morning arose from a darkness held in place by colossal low-hanging cloud banks, which seemed determined to prevent the sun from making something more of the -°C air. There was nothing inspiring or fluffy about this ceiling. It was thick and menacing, barely parting for the sunrise that looked for an opening just before 0700. Besides the brightening sky astern, you could tell that a sunrise was climbing the back side of the gloom because errant rays poked through to illuminate its furrowed undersides. For a few glorious moments the blackened banks broke open to reveal the great ball of fire ascending along its daily route, striving for the next higher ribbon of clouds and the clearer sky above. Meanwhile, Laurier kept focused on a generally westbound course through Edinburgh Channel's dog-leg between Murray and Edinburgh islands.

Later on, once into Dolphin and Union Strait, Laurier added a second main engine to its powertrain, which increased its speed to 14 knots and produced a big white bow froth arching forward and to its sides. The resulting bow wave angling away from the ship had some curl to its topsides, as Laurier charged out Dolphin and Union Strait for the last time this season. This was a smooth ride, fortuitous for the ship and science crews working on deck and in shipboard labs preparing equipment needed for the upcoming weeks of research. Repairing navigational beacons has little place on this next phase of Laurier's Arctic patrol. Meanwhile, the ship's petite helicopter clung to the deck inside its retractable hangar, eager for another call to flight stations.

Eric W. Manchester

THE HEAT IS ON

ABOARD CCGS SIR WILFRID LAURIER

Underway In Beaufort Sea

Monday, September 24, 2007

Today, I learned my native name – Eric Two Sweaters. OK, so it isn't what the kids back in Gjoa Haven expected, but it is better than Gee, I Thought Only Cadavers Felt That Cold. Not that anyone is touching me for the comparison – the ten-foot pole froze. Now, I'm not usually a cool guy – my kids will attest to that – but over several weeks of freezing temperatures and strong winds embracing the ship, the ambience in my cabin has taken on a certain chill. In fact, walking the length of my deck is a trek across two climate zones. Even with my cabin's heater set on Hates, my dollar-store thermometer only aspires to +14°C. Not that I'm complaining – the root vegetables keep longer.

Speaking of things colder than a divorce attorney's heart, today began at a wintry -2°C over a sea struggling valiantly to remain a fluid +1°C. The 20-knot wind polishing Laurier's topsides produced a wind-chill that was just below "I can't feel my buttocks". But, we enjoyed a nice, rhythmical 13-knot ride on 4' following swells, which were punctuated by whitecaps – made all the more phosphorescent by the slate-grey mood of the sea.

By mid-morning Laurier stopped to rest at anchor in Amundsen Gulf's Franklin Bay, on Canada's mainland shore facing the Beaufort Sea. This was the place for a trial-run of some sampling equipment, in preparation for the big show that begins tomorrow. While the gadgets were tested, we rose and fell in persistent swells of 6'. While we waited in the name of science, our helicopter pilot had to draw on his heli-logging experience to help retrieve a small boat from its hang-up on a beach. Our Eurocopter hooked the boat's towing eye and skidded it into deeper water so it could be towed away.

Diversions over, we resumed our journey toward Tuktoyaktuk. Leaving Amundsen Gulf behind, Laurier entered the Beaufort Sea beneath big blotchy clouds through which blue sky broke in wide swaths. Here and there sudden shafts of sunlight danced on the swells. Later into the evening, the wind increased and churned the sea to greater heights.

Some hills smoke near where we stopped this morning. Subterranean coal deposits have been burning for as long as anyone remembers. Fires are smoldering underground and smoke escapes through fissures in the bluffs, rising in long arching plumes that follow the wind. At night the red glow from the fires is often visible.

Speaking of hot stuff, during the day my cabin acquired a spare portable heater, which raised spirits and warmed my typing finger. So, now what will I do with all that rutabaga?

Eric W. Manchester

LUMPS AND BUMPS

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea, Near Tuktoyaktuk

Tuesday, September 25, 2007

It seems like just yesterday that we stood amazed at far-off light in our night sky, when traces of somebody's sunny day could be seen spilling toward us over the horizon. Back then, as the 24-hour daylight changed with the season, the sun set and rose mere hours apart and the middle-of-the-night darkness glowed. As it turns out, that yesterday was seven weeks ago. Now, serious night-time envelops us by 2100 and the dawn's early light isn't.

This morning a grey hint of the day yet to come first appeared along the cloudy horizon just before breakfast. Some two-and-a-half days after picking our way through Cambridge Bay's twisting, shallow exit, we are still steaming toward Tuktoyaktuk for our second rendezvous with The Louis, and to participate in a federal government minister's agenda. This time it's the Minister of Indian and Northern Affairs who is to delight and entertain us with something important – I suppose – I hope – well, maybe it won't just be just one more in an endless round of photo ops and cleverly-written announcements. Perhaps I've become cynical in my soon-to-be senior years – OK, so I have – but is it just me – OK, maybe it is me – so, then let's give the chap a fair chance to do his song and dance before sharpening the vilification crayon.

At just a hair's breadth into negative numbers, today's temperature was warmer than we've had for some days. And, at 0645 the wind was almost a pleasant brush against my bearded face. For a time we stopped to begin work along a new string of science stations, gently wallowing in the steadily increasing swell. By 1300 our nautical world was in flux. The wind increased to 30 knots (sometimes 40), and the swell built up to 6' topped with whitecaps that often blew past in white streams. A snow squall moving at the speed of something quick blasted us, smothering all visibility and briefly leaving a crunchy residue on deck. Brilliant streaks of sunlight punching through the squall painted an other-worldly scene.

Soon after, the Beaufort Sea was rolling Laurier over 12' swells, with diagonal stem-to-stern twists and occasional heaves that ended in roller coaster G-force kinds of descents. When the ship was underway it mostly ran with the wind and sea, which produced a gentle rise and fall. But any time we stopped, the ship wallowed in the seaway, often lifted from its sides by the dark swells driving past. That was when I particularly appreciated my small in-cabin desk with its narrow legroom. If I pulled my perch into the desk tightly enough for my feet to brace against its backing bulkhead, I could flex my knees against the desk innards in an endless thigh-master routine that held me in place, in a lurching kind of way. My chair is a wheel-less office model with more tilts and swivels on this lumpy sea than a mechanical bull. According to WCB regulations, if it had wheels I'd have to wear a helmet. Well, they don't actually say that but someone should research it. According to the latest weather forecast, some bad weather might be moving in on us by Saturday.

Eric W. Manchester

During one interminable stop for science work amidst the bluster and slop, Laurier had to maintain its position for some eight continuous hours – manually held by thruster, throttle and Alana (our 3rd officer and dynamic positioning system on that watch). The crew working on deck had their own challenges, in the form of a several-hundred kilogram sampling apparatus called a rosette. Wrestling the device over Laurier's side to plumb the depths, then retrieving it back onto the rising and plummeting deck took a crane and brute force to accomplish – all the while trying to prevent its swaying bulk from damaging ship and crew.

After several hours of heaving, pitching and rolling to the accompaniment of rhythmical groans, creaks, rattles and shudders, I've nearly figured out all the words to the ship's tune. While I don't know its title, it certainly has a good beat, but it's difficult to dance to – unless you count ricocheting off bulkheads when navigating the ship's interior as a form of artistic expression. And, who exactly thought that calling it your funny bone made its pointed contact with hard surfaces somehow hilarious - it isn't, you know, unless it happens to someone else. Ah hah, now I get it.

INSERT SENSATIONAL HEADLINE HERE

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea

Anchored 12 Miles Off Tuktoyaktuk

Wednesday, September 26, 2007

During our overnight transit toward Tuk, the swells reduced to 6' and the wind calmed to about 20 knots. The heavy-overcast morning featured a few bright patches that made the +1°C temperature feel just a smidge warmer. Later, at around 0830 I didn't know which way to look. As the full shiny moon was setting in one direction, the sun's full-on fireball cleared the horizon on its way to oversee a sky that was growing ever more clear and bright.

Following two early-morning stops to retrieve data collection buoys, we steamed off to meet The Louis. Our journey was enhanced by the distant company of whales – too far off to tell which species, but close enough to enjoy their presence. By noon, Laurier and Louis lay anchored side-by-side, some 12 miles off Tuktoyaktuk's shallow waterfront. Even that far from the outpouring of the Mackenzie River, its turbid flow encircled both ships and muddied the appearance of the Beaufort Sea beneath us.

Canada's Northwest Passage won't be the year-round, ice-free, marine super-highway of commerce and recreation that many predict is its near-term future. The reason, say many experts who study our Arctic, is for the same reason that has everyone a-twitter about the likelihood of ocean-front properties becoming available inland – climate change. You may have heard of it. Apparently, change is the operative word here. Of course there is no simple explanation, and most researchers admit they don't know why many of the observed changes are happening. But, something that has changed is making the likelihood of our Northwest Passage becoming Panama North look more remote – wind. Wind blowing at us from over the Pole, to be specific. And, nothing moves an ice pack better than a good wind.

Eric W. Manchester

Most of the open water is on the Russian side of the Arctic because that same wind is blowing the ice away from their shores, toward us – where it piles up in our Northwest Passage (notice how I resisted the urge to use that worn-out prefix, fabled?). Reportedly, some long-range studies forecast that by 2080 winter ice in our passage will be similar to winter conditions now.

Dr. Humfrey Melling, from the Institute of Ocean Sciences near Sidney, BC has been in these Arctic waters for 17 years, measuring sea ice and its many characteristics (thickness, volume, quantity, type, movement). This year he leads a dozen researchers from Canada, USA and Japan who are working onboard Canadian Coast Guard Ship Sir Wilfrid Laurier, studying Pacific Ocean inflows to the Arctic, trace metal composition of these far-north waters, bird populations, and ice data collected over several years. The work is exhausting and hands-on in the literal sense - long shifts deploying sampling devices, counting avian residents and transients within defined areas, and grappling with undersea moorings comprised of upward-looking and Doppler sonar units. A side benefit of these ice-monitoring moorings, which hug the sea floor for up to three years, is that they also collect information about water temperature, salinity, current, waves and storm surge - all adding to our meager level of Arctic knowledge.

A surprise finding, according to Dr. Melling, is that the amount of ice in the Tuktoyaktuk area is about the same as in 1990. Although there has been a dramatic reduction in the amount of multi-year ice, and the Polar ice cap has shrunk, in winter the void is filled by increasing amounts of annual ice (forms each winter, melts each summer). Although the summer ice-free navigation season may be a bit longer now, it isn't always clear sailing for non-ice class vessels (1982, 1999, 2007 were good, 2004 was tough) – and the sun yet sets here for several months at a stretch, resulting in winters that are still frigid.

While humans tend to compile mountains of statistics on all kinds of things (does anyone really need to know how many penalty minutes Dave Semenko served when playing against a one-eyed, ambidextrous goaltender?), our Arctic waters aren't yet very high on anyone's list. Accurate ice observation dates back only some 30 years, coincident with the advent of satellites. To be sure, there is greater emphasis than usual on northern research due to this International Polar Year, but some projects have only two-year funding. We can't afford to wait until the next century – as was the case this time – before we again pay serious attention to this fragile part of Canada.

GONG SHOW?

ABOARD CCGS SIR WILFRID LAURIER
Beaufort Sea, Northwest of Tuktoyaktuk.
Thursday, September 27, 2007

I'd like to tell you that Chuck Strahl, federal Minister of Indian and Northern Affairs, today visited CCGS Louis S. St. Laurent anchored 12 miles off Tuktoyaktuk to bestow tidings and honours upon its company, and to announce something truly meaningful for the future of all

Eric W. Manchester

Canadians. As I said, I'd like you tell you that, but I cannot – we weren't invited. After steaming nearly three days to be here on time, all they wanted from us was the use of our helicopter.

CCGS Sir Wilfrid Laurier lay anchored barely a bureaucrat's-throw away from The Louis, but it might as well have been the chasm between what Coast Guard's budget needs and what it gets. Stay over there – don't come a-callin' – we won't lower the gang plank for you lot, but be sure to shine up your helicopter real nice. For this I laundered my undies and shaved my legs in a 12' sea?

In the absence of our presence (clever, no?), what we think we know about the Chuckster's travelling sideshow is that he and an entourage, including a CBC lifer willing to report on this stuff, blew into Tuk aboard an unmarked, Falcon private jet. Here's Laurier's big part – instead of The Louis' helicopter making two trips to collect the main act and its supporting cast, our helicopter hauled one half of the group so they could all touch down at the photo op together. One might ask, if The Louis has a two-helicopter garage riding its hindquarters why did they need our machine? Could it be that Ottawa won't cough up enough for the second car payment?

Once the gaggle was aboard The Louis, our helicopter had to return to wait on Laurier's flight deck until needed for the getaway. While onboard The Louis, Strahl entertained his captive audience with something clever (we assume), then bonded with common seamen in a closed lunch in their mess (specifically ordered by his handlers). In and out in a couple of taxpayer hours, the private jet's landing gear barely cooled on Tuk's tarmac - so slick a production that all it lacked was W's Mission Accomplished banner.

Until squandering the public purse becomes a capital crime, with equal punishment for the face and the back-roomer who thought up the scheme, I guess we're fated to endlessly endure photo ops and re-hashed pronouncements that could have been faxed to the already-heard-this-song desk. Is Sheila Fraser still Auditor-General (I've been gone seven weeks)? I hope she enjoys Strahl's explanation of why he side-tracked two major Canadian Coast Guard ships off their extensive, expensive and time-sensitive Arctic programs to provide a backdrop for someone's agenda. Oh, he doesn't have to explain?

As I said, I'd like to have told you about something really neat, informative and uplifting – of real value to Canada. Maybe something like that did happen on The Louis today, but judging from its packaging, which is all that someone trying to peer over the gunwale could see, one can't help but conclude it wasn't worth what we paid. I hope to stand corrected, but won't hold my breath waiting.

Eric W. Manchester

CARRYING ON

ABOARD CCGS SIR WILFRID LAURIER

Underway, Beaufort Sea, Northbound.

Thursday, September 27, 2007

The full moon faintly shone through weighty clouds. It scarcely illuminated our -2°C early morning and made the steely ocean look every bit its barely-above freezing temperature. Abeam, The Louis' deck lights blazed with a hamlet's glow, while distant twinkles marked the anchorage of an oil rig and its tug. Thus began the big day for the something special on The Louis. Since I already ranted about that colossal waste of time, we'll fast-forward to the productive part of our day.

By 1945 Laurier was steaming away from The Louis, on a three-hour jaunt toward the next station at which to deploy data collection moorings. Unlike most of the empty Arctic waters on which Laurier sailed thus far, this area hosted a smattering of tug traffic, handling Tuktoyaktuk's burgeoning freight build-up destined for remote communities – much of which, some skeptics say, will not get delivered before this winter's freeze. For too brief a time, a pair of Bowhead whales escorted Laurier on its northwesterly course, their broad flukes waving to us each time the big mammals dove.

Perhaps we missed a politico's contrived event, but we're learning lots of real information from the scientists onboard Laurier. They tell us that multi-year ice is stronger than younger ice because each winter when the older stuff refreezes, concentrated brine is squeezed out (less salt content, denser the frozen mass). The thickest ice in the Arctic is against the Canadian shore, which averages six metres, up to 12 metres thick. Despite Arctic temperatures being nearly 2° warmer over the past 50 years, the ice at Resolute has gotten thicker while the ice elsewhere hasn't seen much change in thickness. Although global warming is said to be raising Earth's temperature by .4° per decade, the Beaufort Sea is now 1° cooler than in the 1980s. While extensive use is made of computer models to help predict future outcomes, they have a particular weakness for the Canadian Arctic because they don't usually include a specific Northwest Passage component. Most ice-melt happens in August, and this year there was 36% less ice remaining than in 1978. North of Russia, ships can often go higher than 85° North Latitude in ice-free water (90° is North Pole).

Upon completion of its late-night moorings deployment, Laurier set off on a 24-hour voyage north, to the edge of the Polar ice sheet to begin long hours of sampling the sea for science.

Eric W. Manchester

ON THE EDGE

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Station-Keeping:

72° 26' N. Latitude, 136° 56' W. Longitude

Friday, September 28, 2007

Beneath the morning's dim -3C° glow, Laurier continued steaming due north, lightly fanned by 10-knot winds and dusted by fog-framed snow-showers. In contrast to earlier weeks, where work was punctuated by ports of call, the ship is now on a schedule that includes only two stops near shore until reaching Victoria home-base nearly one month from now. Much of this leg will be spent out of sight of land.

Well into my week eight, it's been such a blur of activity – day & night - that my daily note-making and writing are all that will make sense of it come November. Had I only been aboard for one crew rotation I'd have come home with an incorrect impression of life on Laurier – a somewhat brutish and exhausting one. There is balance overall, but it is measured over a four-month Arctic patrol rather than reward and punishment in any one day.

The daily grind for beacon repair work versus science work is so vastly different from each other. Beacon work is pure physical misery at a continuous high rate, which leaves the shore-party crew fit for little else at the end of each 12-hour day watch. Little wonder they are so frazzled by week four, and must dig so deep within themselves for the wherewithal to complete the last two weeks.

Science work, while comprising two distinct jobs, is spread out over each day's 24 hours and is much easier labour – the work being shared by more people. One component of the science work is collecting samples – water, bottom, readings. That work entails frequent stops to lower apparatus over the side, then retrieve it and carry on to the next station, at intervals of 25 minutes to an hour or more. The other science component is the moorings program – deploying and retrieving instruments moored to the sea floor for up to three years at a time. In some cases the distance between moorings is measured in many hours – or a day of steaming. In other locales, the moorings are mere miles apart.

For both sampling and mooring work, the crew on deck is involved in preparing the equipment, and then operating the winches to lower and raise the apparatus. But, that work is far less physical and demanding on the sailors than the beacon work. But, the moorings work has an element of tedium. At some stations it takes up to 25 hours to complete the work due to the extreme depths – several thousand metres at some – during which time Laurier must maintain its un-anchored position (manually) regardless of weather and sea conditions.

Shortly before 2200 Laurier slowed to halt barely one nautical mile from the edge of the Polar ice sheet, floating on a 0°C sea. Here, we are to begin work that will require the ship to

Eric W. Manchester

remain carefully on-station (not anchored) for some 18 hours while a rosette is lowered to a depth of 2,400 metres to begin collecting water samples, which will be analyzed for traces of iron and aluminum. I'm told that the presence of iron is connected to how substantial will be the growth of phyto-plankton – a vital part of the food chain. Aluminum, which has a relatively short lifespan and comes primarily from terrestrial sources (land-based river outflow), aids in tracing the path taken by any particular body of water.

GREAT CIRCLE ROUTE

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Station-Keeping:

72° 26' N. Latitude, 136° 56' W. Longitude

Saturday, September 29, 2007

After a night of station-keeping nearly 200 miles north and west of Tuktoyaktuk, we were no closer to getting underway for the next science stop. The science work suffered some delays in getting itself going, and in one case our crew had to manufacture parts for a science apparatus so it could be used, otherwise that entire week-long, first-time project wouldn't be do-able. Things now seem to be settling into some rhythm, but we might be on this station for another 25 hours while the numerous science projects are completed.

This morning we're in fairly gentle conditions - wind only 15 knots (now easterly); bits of sun breaking through blotches in heavy wet clouds; temperature -4°C; sea surface temperature nearly down to 0°C; and, generally flat seas reaching only about 2' swell height. We're approximately one mile south of the leading edge of the polar ice sheet, which from this distance appears to have ridges, lumps and even some small knolls. The crew tells me that at this station, in past years, they struggled to keep their position in 45-knot winds and very big seas, with way more ice around them than now (and their year-end escape became an ordeal).

Tonight we are switching to the Alaska Time zone, which is one hour behind Victoria. Until now our ship time has been set to the Mountain time zone (one hour ahead of Victoria), although we really did get east enough to be in the Central zone – but in a way it doesn't matter what time zone is on the ship's clock because the work goes on – mainly based on universal coordinated time (formerly GMT). But, now that we're so close to the Alaska border, the time zone will make a difference to the daylight hours for our deck work.

An oddity of being this far north, where the lines of longitude converge, is that when we travel just a couple hundred miles across the Arctic, farther south it can equate to crossing the width of a province or more. If we were as far south as Victoria - on our present reading of longitude - we'd be well out west in the Pacific Ocean. Just extend the Alaska-Yukon border line straight down and that'll give you an approximate idea of how far west we now are (we're still a bit east of that line).

Eric W. Manchester

LATER.....

Well, it isn't just the weather up here that changes on short notice. Our next couple of days are potentially re-arranged, thanks to suddenly being tasked by Trenton (Ontario) RCC on a SAR call concerning an overdue boat. Last evening I heard Inuvik CG Radio issue the Pan Pan call over the VHF radio. The report was that someone (alone in a 14' open aluminum boat) transiting the Mackenzie River from Inuvik to Aklavik (not all that far apart) was reported overdue. We were hundreds of miles away from the scene, so it didn't affect us at the time, and we never heard anything more about it until RCC called. Their theory is that, since a local search didn't turn up the boat or owner, he could have drifted down the Mackenzie River toward the Beaufort Sea (about 80 miles, really?).

So, once again someone wants our helicopter! One might wonder why RCC didn't send up a Hercules aircraft, which can be in the search area before us and operate out of Inuvik for an unlimited amount of time, with endless fuel supply. At 1615 we pulled up the science gear and got underway in about 15 minutes from getting the call. Luckily, the gear was nearly back up from a deep cast; otherwise it might have been hours before we could go. We're steaming all night toward the Mackenzie River – nearly 200 nautical miles – so by first light we can launch our helicopter to commence searching the river's broad mouth and delta.

But, we could have a problem – this late in the Arctic patrol, our onboard supply of helicopter fuel is running low, and the airstrip nearest to the search area (Tuktoyaktuk) isn't such a full-service aerodrome. Inuvik is an hour's flight from there, which is nearly half the range of our Eurocopter, so going there for fuel would be an endless circuit of taking on fuel just so you can get back for more, without really accomplishing much in the search area. So, the helicopter is taking a pump, in case it has to refuel itself from barrels at Tuk, or from fuel barrels cached at sites up here

Whenever this SAR tasking ends, we have to go back to the station we just left to finish the work, before resuming the planned science work heading over the top of Alaska. Statistically, about 80% of overdue boat incidents turn out to be false alarms, but it's what happens on the other 20% that means there is no hesitation in responding to this call. If anyone questions the value of a human life, in this case at least, we know that it is more than the \$1,000 per hour it's costing Laurier to go have a look.

MUCH LATER....

OK, so we're not off to save mankind. Our SAR tasking was terminated after we were steaming nearly four hours. Reportedly, the overdue boater was found passed out at a friend's cabin - recall the 80% rule. So, we're steaming back to the science station we left, to resume the work - only now the weather has worsened - 30-knot wind & 8' swells, with a forecast for something more. Maybe a drunken boater guy wasn't worth our \$1,000 per hour, after all!

Eric W. Manchester

By midnight we were back to where the day began, with five \$20,000 sampling devices fastened at intervals along a steel cable lowered into the sea to a depth 2,400 metres. Once in place, suspended from one of Laurier's winches, the string of self-contained, self-powered devices pumped sea water through their containment filters to collect minute traces of dissolved metals – a process that takes over five hours, while the ship's bridge officers manually hold the vessel on its prescribed station. In addition to the time needed for the pumping alone, assembling, lowering and retrieving the rig takes nearly an hour each way – on a heaving, frosty deck.

X MARKS THE SPOT

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Station-Keeping At:

71° 43' N. Latitude. 135° 29' W. Longitude.

Sunday, September 30, 2007

Our all-night station-keeping, while sampling pumps laboured deep below the sea's 0°C surface, ended in the 0500 darkness of a snarly day. The -2°C air was thick with blowing snow, rain and sleet that kept out the morning light until well past 0800.

Through the graying dawn we could just make out chunks of ice – and one slab nearly the size of Laurier – which until recently had been tantalizing blips on our radar screen. On its way to the next science station, Laurier shivered through 30-knot winds that often embraced 40 knots, and beat through 8' swells, which – on impact - shredded into massive sheets of spray that momentarily shrouded the foredeck. The sea was so churning that its wave tops showed as myriad dots on the radar.

By 1000 Laurier's deck crew again wrestled bulky scientific gadgetry up and over the ship's heaving sides, to deploy it on another lengthy sample-gathering mission. Station-keeping in such blustery conditions was a non-stop routine of throttle, rudder and bow-thruster adjustments for the bridge officer working 50' above it all.

Hours later, the gear and crew stowed and resting, Laurier resumed steaming along what seemed an endless course toward yet another precise spot on the chart where the Beaufort Sea would again be probed for its secrets. Much later, colder and darker into the night, the ship began another defiant marathon dance against the forces trying to dislodge its grip on place.

HAPPY BIRTHDAY

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Steaming Past:

70° 37' N. Latitude. 138° 58' W. Longitude.

Monday, October 01, 2007

Eric W. Manchester

What a difference a day makes! Yesterday, it was just ordinary new ice. Today – October 1st – it officially became multi-year ice. If it was new, and survived the Arctic summer melt until today, it graduated to that class of ice which is expected to be floating around up here for many more seasons – hopefully bulked up during the coming freeze, better to withstand the next summer melt. Also, on this day the record shows that our captain (Thomas) also came of age (59).

Another – and welcomed – difference brought by this new day, is the weather. The frigid sea and air temperatures changed little, but instead of yesterday's buffeting we enjoyed gentle seas fanned by 10-knot breeze. Since we had a long, uninterrupted way to go, Laurier stoked up a second main engine to drive us at 14 knots. This was a day for again squaring away cargo and equipment in a constantly-changing belowdecks puzzle, while around-the-clock researchers processed their treasures in the ship's cramped science labs.

Meanwhile, moonlit patches punctuated an otherwise black sky above Laurier's overnight southwesterly journey to its next job.

DRAGGING THE LINE

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Anchored.

70°17' N. Latitude. 145° 19' W. Longitude.

Tuesday, October 02, 2007

Under cover of darkness, Laurier quietly slipped across our shared international boundary into United States waters, well within their 12-mile limit. This was no accidental incursion into foreign territory. In fact, the moorings work in this particular region is not only sanctioned by U.S. authorities, it is funded in part by Shell Oil - which holds hydrocarbon properties in the area, resulting in their keen interest in ice studies.

This morning resembled many before it. At 0630 its heavy overcast hid the sunrise, instead allowing blotches of brightness to filter through in places and faintly illuminate the Beaufort's low, 0°C swell. Occasional snow flurries, swirling in the 15-knot wind, glittered in the ship's deck lights while a lone researcher readied equipment in the -2°C morning air.

So far, this crew has been lucky with the weather. More than one week ago worsening conditions were forecast to catch us in just a few days. But, as the week transpired, the forecast continued with the same in-a-few-days warning. Now, there is no bad weather forecast for the foreseeable time. Mostly, the winds are to be around 20 knots, with below-freezing temperatures, including some fog, snow flurries or freezing spray – with the odd small craft warning – not really much different than most recent days. Hopefully, there isn't something big and/or undetected laying in wait for us someplace. Folks who have been in this area before are commenting on how nice the conditions are compared to their previous attempts to work here – and how easy this is without ice all around the ship.

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By first light we began to retrieve sonar moorings that resided just above the sea floor for the past several years while they collected valuable data about ice presence, characteristics and movement. Getting those moorings back should have been a fairly simple task of transmitting codes to trigger release mechanisms, which allow the moored, buoyant sonar units to float to the surface, where one of Laurier's RHIBs would snag it for the ship to haul onboard.

But, the first two buoys of today behaved badly. The techno gadgets onboard Laurier pinpointed them. The devices talked to each other and even confirmed receipt of, and compliance with, the release commands. But, nothing popped to the surface. With each sonar unit containing a wealth of information, the value of their loss would be far greater than their \$100,000 price tag.

To find the errant high-tech data collectors, Laurier employed an ancient sub-surface retrieval method – dragging. A very long, weighted cable contained numerous grappling hooks was payed out from the ship's welldeck. The ship backed away from the set (so as not to foul propellers), laying out a wide elliptical pattern of cable to surround the first buoy's known position. Gradually the ellipse was closed and tightened, which should have snagged the buoy and released it from whatever held it. Instead, tension built up on the cable until it suddenly broke and sent all the grappling gear to the sea floor. Still no buoys appeared.

By now the wind had increased to 30 knots, which rolled up 12' swells to make deck work even more precarious. Often, the ship would heave and pitch beyond its routine lurch, sometimes reverberating with a shuddering crash into an ill-timed swell. The crew laboured to build a new dragline, cobbled together from heavier steel cable, weights and more grappling hooks. With Laurier bucking backwards and sideways against the frothy swells, the pattern was again laid out – this time successfully dislodging the sonar buoy. Quickly building on that triumph, the second wayward buoy was located and retrieved in the same fashion.

Plenty of effort, frustration and time were expended getting those two buoys, but in the end \$200,000 worth of gear and priceless data was secure on deck. Once onboard, the units were scrubbed clean for their long journey to the Institute of Ocean Sciences lab where researchers eagerly wait to tap into the accumulated wealth of information. Some of the moorings retrieved this year were clad in marine growth of sufficient types and thickness to be noteworthy to the scientists, compared to the generally clean devices gathered in previous years. Although such growth is typically the result of warmer water, these sporadic occurrences had no ready explanation.

Buoyed (no pun intended) by that success of sorts, we steamed to the next location where two more sonar buoys awaited their dash to the surface, to be replaced with ones we were set to deploy. But - wait for it – they, too, failed to surface on command (several commands, actually). A late afternoon drag quickly recovered one buoy. But, its mate – although talking to us - remained submerged through two more dragging attempts made into the early

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evening. With little light remaining in which to spot the mischievous gadget should it be pried free, further dragging attempts were postponed until morning.

Consequently, beneath a heavy wet sky Laurier laid out its anchor for the night in slightly improved conditions of 20-knot winds, 6' seas and snow flurries that added to the frozen flakes already accumulated on deck. After several days of deploying scientific devices thousands of metres beneath the surface, it seemed somehow odd to lay at anchor in only 45 metres of water some 18 miles offshore from Alaska. With each hour's delay in accomplishing planned tasks, the time remaining to complete a still-lengthy to-do list spread over vast territory is shrinking almost exponentially.

FIVE OF SIX

ABOARD CCGS SIR WILFRID LAURIER

Beaufort Sea. Passing through:

71° 10' N. Latitude. 148° 11' W. Longitude.

Wednesday, October 03, 2007

Today's high hopes for sonar buoy recovery quickly dropped as low as the -4°C air temperature. Somewhere, not so deep under the below-freezing sea, a buoy remained hidden despite telemetry confirming that its release mechanism had been triggered. This is the same buoy that caused Laurier to anchor for the night, after it failed to appear following invitations to surface late yesterday.

While two members of Laurier's crew in a RHIB bobbed and lurched over the 8' swells, refrigerated by 20-knot winds, the ship deployed a long string of chain and grappling hooks in yet another attempt at a dragging recovery of this fourth sonar buoy (out of four) that wouldn't voluntarily rise to its occasion. The first three were eventually located by this ancient sub-surface search method. But, by 1030 when three drags failed to locate that fourth truant buoy, Laurier gave up the quest and headed for the next station – where two more submerged sonar buoys await pick up. The captain is frustrated by the continual failure of the release mechanisms, and now IOS is short a \$100,000 device – not to mention the valuable data.

This was an ominous start to a day that included two more buoys to recover, before steaming some 16 hours to begin deploying the much larger sonar buoys for the group of researchers onboard from Japan (JAMSTEC). The day didn't improve. The final two sonar buoys scheduled for pick-up also failed to surface on command, despite giving confirmations their release mechanisms had properly functioned. Fortunately, both were recovered through Laurier's proven dragging technique, and we quickly set course for the far-off depths of Barrow Canyon.

By early evening, the horizontally-driving snow squall gave credence to the weather forecast calling for deteriorating conditions over the next couple of days – suggesting that by Friday we could be working in 40-knot winds and at least 7' seas. While underway, our Bos'n and

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four seamen – with the aid of the ship's derrick and brute force – lifted, swung and stowed an un-needed deck winch into the hold, to be secured before having to risk the maneuver in the expected worse conditions.

A noticeable difference between Canadian and American Arctic waterways is the number of seismographic survey vessels – there being little noticeable traffic on the Canadian side compared to a flotilla on the American. Today, alone, we've encountered five off northern Alaska, the first of which towed some three miles of sensor array.

While most of the ship's company count down the days remaining in their five-week patrol, for many of the researchers their several weeks onboard amount to but a small portion of their year's program on ships of all description – in some cases, redeployments happening nearly without breaks between.

By 2230, the steady snowfall – which appeared thick in the masthead's light – had already turned Laurier's decks (and the RHIBs) white enough to reflect the slightest light. We continued our 14-knot northwesterly voyage toward tomorrow's tasks.

BLOWIN' IN THE WIND

ABOARD CCGS SIR WILFRID LAURIER

Arctic Ocean. Steaming Northwesterly.

Passing 73° N. Latitude. 158° W. Longitude.

Thursday, October 04, 2007

In the Arctic it's always about the weather. While it can sometimes soothe a troubled soul or weaken the toughest among us, it can surely kill the unwary – and is frequently lethal to the best laid plans of everyone. Like today.

Mornings are beginning to follow a common design – heavy clouds delay broad daylight until after 0800; sub-zero air temperature (-4°C today); seas rolling to 8' in 20-knot winds. The wind is now blowing mostly from an easterly direction, an ominous change of direction that often means sea ice begins moving toward our only escape out of the western Arctic.

This year Laurier is later than usual turning for home. In fact, we still have one more science course to run that will take us farther away from that one way south. While there is less ice than usual in our immediate vicinity, a wind blowing solidly out of the northeast can quickly choke our route to the Bering Strait, with ice greater than Laurier can defeat. Many previous Arctic patrols have ended with Laurier fighting a tough campaign to break out for home. Once, when it could go no farther, the ship turned around and made a desperate run out through the eastern Canadian Arctic, down to Halifax and on to Victoria via the Panama Canal.

We steamed several hundred nautical miles since yesterday's drags and pickups. Before 0900 we reached the location where we were to retrieve and deploy several large, complicated sonar buoy moorings in very deep water, for the research team from Japan. That's right –

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were. As Laurier delicately maneuvered toward the first spot, two seamen circling in one of its RHIBs prepared to lasso the buoy when it surfaced and then transfer it to the ship for hoisting. By the time the submerged buoy was talking with us, ready for release, the winds were above 30 knots and whistling a ferocious tune past our bridge windows. When the wind exceeded 35 knots, and our chase boat frequently disappeared in troughs between 12' swells, the mission was aborted. It was 0945. The weather had morphed from a challenge into a danger in less than an hour. Laurier turned to lay broadside to the treacherous swells to create shelter in which the RHIB could be safely plucked onto its deck.

Following all sorts of weather analyses, it was decided to temporarily abandon this locale's project and steam to where better conditions are expected to be developing some 200 miles to our northwest – above 75° North Latitude, and potentially closer to major ice. With two main engines propelling Laurier at 14 knots, we set off on our 24-hour journey. The balance of the day rolled and groaned over and through the powerfully-driven liquid hills, which didn't rise beyond our comfort level because Laurier's heading mostly ran with the swells. For as far as wind-teared eyes could gaze in all directions, the cold dark sea was streaked white by wave tops frothed and shredded in the blow.

Our proximity to the Chukchi Sea resulted in the presence of at least five different species of birds (one rare) soaring in the jetstream around Laurier's superstructure. According to Martin, the bird researcher onboard with us, he counted more birds this morning alone than he's seen in total since joining the ship on September 19th. Apparently, the Chukchi is a particularly productive food source for local Arctic birds, and the many varieties moving up from their usual southern territories.

Laurier's hours of steaming are not idle travel time between science stations. Samples collected at previous stops are processed and analyzed around the clock in Laurier's cramped labs. In addition, the team onboard from Japan deploys disposable data collection devices along our route without stopping the ship. At predetermined locales, Laurier slows its speed while the devices are launched – spooling out long tentacles of sensors transmitting data back to the ship as they sink beneath the waves. And, Laurier's crew is always attending to the ship's business.

For a time this evening, some of the day's gloom was brightened when sunrays punched through the heavy cloud to dance on the sea's churning surface. If our new work plan isn't weather-beaten, then we will return along this path – away from a homeward course – to complete today's cancelled tasks, all the while glancing over our shoulders toward an escape route that we hope will stay open.

YOU AIN'T SEEN NUTHIN' YET

ABOARD CCGS SIR WILFRID LAURIER

Arctic Ocean.

Reached 75° 06' N. Latitude. 168° 00' W. Longitude

Friday, October 05, 2007

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At just 900 miles from the North Pole, there ought to be ice. Lots of ice. The kind of limitless solid expanse that you wedge the ship against and go walkabout for fabulous photo ops. But, not today. Not here. All we found to brace against were strong winds, big swells and the freezing spray that exfoliated everything it embraced on its way to glazing Laurier's rails and bulwarks.

Our plan to steam 24 hours to this farther north locale didn't pay off in the work-friendly weather we sought. Instead, the wind and sea we hoped to leave behind blustered unabated all night, then strengthened at the dawn's calling. At first light Laurier hove-to in order to snag its satellite link and download current weather information, which served to accentuate the wave action on the ship to the point where life within bordered on uncomfortable. Our brief stop – which seemed longer in the rock and roll – soon returned to powering along our northwesterly course. Today began much warmer than just yesterday, at +1°C over a +4°C sea.

Shortly after breakfast we knew the day's work was in jeopardy. By the time we reached the first of two undersea mooring positions, a dynamic sea made deck work hazardous, and anything done in the ship's RHIB little more than a survival exercise. Safety considerations took on greater importance with the apparatus to be manhandled at this locale, gargantuan by comparison to what the crew danced with up until now. Whereas the sonar buoys deployed by IOS are single devices some 8' tall, the units used by the science group from Japan (JAMSTEC) comprise 200-metre long cables holding multiple sensors and buoys at intervals along their length, ending with heavy weights to moor them to the sea floor. Tussling with this gear involves many hands on deck, a RHIB alongside and Laurier's derrick to lift and control so many swaying, lethal components. Despite this first mooring giving off a strong signal – evidence of its presence and readiness to surface – wind and sea conditions were so bad that leaving it in place for another year was the only obvious choice.

Laurier set a course for the second similar buoy to retrieve, hoping that its location 60 miles away would be enjoying calmer conditions. Since that buoy had been in service for several years, collecting it now was critical. While the equipment would likely survive another year beneath the Arctic Ocean, the batteries might not – which means it might not be able to fire its release mechanism. If it remained close to its plotted position it might still be salvageable by dragging for it, but the odds would be much longer against it being found.

Getting to that second buoy meant running a course in diagonal opposition to the wind and swells, which to any sailboat sailor means that you're beating – and probably miserable. Actually, it's called close-hauled, but the more commonly used term, beating, better describes the experience. Turns out, it's not so different in a ship as long as a football field. Laurier stuck its nose in, heeled nearly ten degrees and thumped its way toward the buoy's search and rescue.

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Around noon, from seemingly out of nowhere, we suddenly had lots of company on our route. A flock of some 40 Kittiwake Gulls materialized astern, and closely followed Laurier – likely intrigued by our galley's aroma that wafted up to where the mob soared and swooped. According to our avian observer (OK, Martin isn't a bird – just a watcher), Kittiwakes are normally close to icefields. Given that this year they are an unprecedented distance from ice, it is assumed they are adapting to find food farther out at sea.

By mid-afternoon, Laurier was on-station, and the second buoy's gadgets were talking to our gadgets, good to go for its launch toward home. Unfortunately, surface conditions were too severe to risk the attempt. In view of the critical nature of this retrieval, the decision was made to wait awhile to see if conditions would take a turn in our favour. For the following several hours Laurier drifted, wallowed and shuddered in the swells stirred up by 35-knot winds (gusting above 40 knots).

Reportedly, in 1985 a ship couldn't get within 200 miles of this location due to the ice's domination over the area; by 2006 this spot was the leading edge of the ice; and, today the hardest of water is too far away to be of any notice to us. Those who know say that today's conditions – big wind and big waves – are what you need to grow more ice, because it helps the sea release its heat. Thus far today, the big wind and big waves also helped some of the crew release their lunch.

Shortly after supper – yes, Bertrand and Toby were still dishing up sit-down meals, and Roberta and Meghan were valiantly serving them – the edge seemed to come off the sloppy whirlwind outside. At least it was enough to hatch a plan to retrieve JAMSTEC's buoy.

Laurier's RHIB launched while the ship maneuvered into place. Then the snow squall hit, in a horizontally-driving sort of way. With the scene now seemingly perfect, the release code was transmitted; the 200-metre contraption shot to the surface; the two folks in the RHIB lassoed it on the first pass; Laurier's derrick hook picked up the load when it came alongside; and the deck crew choreographed everything onto the ship without a hitch. Did I mention that all this took less than 15 minutes, in 12' seas that continually rocked Laurier and regularly devoured the RHIB from view in their troughs? It did. The remarkable thing about the whole event was that it was not remarkable to the crew doing it – it was just another day at the office.

Buoyed by our success (ya, I know I used that phrase before, but I kinda like it), we set off to where we began yesterday morning. Rene, our ice and weather specialist, predicted vastly improving weather way back there – which means we might be able to get those jobs done, which we had to abandon on our initial attempt. But, in order to get to those halcyon conditions, we had to get through what quickly surrounded us here, a challenge made all the more menacing by the announcement, "Attention crew. Heavy weather warning. Secure your cabins accordingly."

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The swing-arm lamp, which was cutting wide swaths across my cabin trying to keep up with its swaying bulkhead, made that caution seem just a tad redundant. When that killer lamp was slashing the other way I pounced on it and tore it out of its mooring, taking it down without a whimper. That ought to have been a lesson for my wheel-less office chair, but it still looked like it was just waiting for the right lurch to take me out - but I figured I could hold my own unless it got on top of me. Never turn your back on a swivel-tilter in a lumpy seaway.

By 1930 Laurier was powering against 40-knot winds, straight into opposing 15' swells that featured rolling, curling, foamy tops. Portholes in the crew mess, just above the waterline, were often submerged by swells scouring past the hull. Fifty feet higher, the bridge windows were deluged by spray breaking off the bow, arching out and up in massive sheets that obscured the sea. Periodically, the air filled with driving sleet, rat-a-tatting like pebbles against the windows.

The ship progressed along its track, heaving and pitching as it ploughed into the briny hills blocking its path - the impact vibrating through its length - at times even hobby-horsing. Standing amidships and peering astern past the aft deck, the view would wildly alternate between gazing steeply up into the sky, and then staring as sharply down into the sea. Throughout the ship, things and people clung to what was available (many thanks to whoever invented handrails). Going to bed, and staying in one's bunk, seemed like it might involve complicated calculations of angles, probabilities and trajectories. It was more restful than it first appeared, but I was glad that all sides of my narrow bunk could be reached at the same time.

Laurier never lost sight of its bow beneath the onslaught, but it often went deeply enough to be fringed by white turbulence, sufficient for the welldeck to be awash. When the bow drove into a particularly ornery swell, torrents of ocean would shoot through its fairleads and flood the foredeck. In short order, a crowd of thrill-seekers assembled on the bridge, wowing and oohing at Neptune's display. A few of us climbed to the top of the bridge, where shouting was useless in the howling wind, to shoot photos one-handed - the other firmly clutching the railing lest we levitate toward Kansas. The magnitude of the rollicking evening was brought down to its proper perspective when an old salt said, "Wait 'til you see the north Pacific."

CHILLS, BUOYS AND GULLS

ABOARD CCGS SIR WILFRID LAURIER

Arctic Ocean. Returning southeasterly to Barrow Canyon

Saturday, October 06, 2007

At first light the temperature was +11°C. Had that been the outside ambience it would have been remarkably warm for this Arctic time of year. Since it was the pall embracing my cabin, the remarks were of a different nature. Sometime during the night the heating system lost its way, and the problem took all of this day to remedy. Fortunately for my sweater collection (I was determined not to be typing in my parka) +11°C was the day's low temperature - by

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supertime a one degree increase hinted at the warming trend that followed. The real temperature – the one the crew working on deck cared about – was -2°C. The wind was down to 20 knots, which still produced a wind-chill of about -14. The leftover swell from last night remained in the 8' to 12' range.

Outside, the late dawn revealed a dusting of snow on Laurier's foredeck, and a hardened coating of ice clinging to most forward surfaces. Our all-night drive against big seas kept the ship continually doused by near-freezing spray, which the howling wind glazed onto equipment, deck, bulwarks and rigging. Soon, just like at home, the crew treated the ship's outer walkways to a sprinkling of de-icing salt. Since the other iced fixtures didn't yet pose any safety or stability hazard they were left to glisten in the short-lived morning sunshine.

While still enroute back to Barrow Canyon, in hopes of doing the jobs we earlier abandoned, a better-weather opportunity arose to retrieve a JAMSTEC sonar buoy, and deploy another. The same ensemble cast that handled yesterday's 200-metre long contraptions of cable, weights, floats and scientific instruments deftly accomplished today's pick-up and delivery of similar devices.

Soon, we resumed our course – one which would take us until tomorrow morning to travel, mostly in large lathered swells. When the wind diminishes, the water does not immediately follow. Consequently, we steamed under fairly pleasant wind but big sloppy seas, which still caused substantial pitching that drenched Laurier's foredecks with exciting spray. Most of our travel was a regular up and down, with an occasional lurch. But, now and then the rhythm was powerfully punctuated by Laurier's heave upward on a larger swell, which ended with a shuddering fall into its trailing abyss.

For awhile, an energetic, immense flock of gulls entertained all who could spare the time. The avian mass swirled all around the ship – over, beside, behind – soaring ahead, with some swooping close past Laurier's bow mere inches off the waves. Uncharacteristically, it seemed like the gulls were more interested in their aerobatics than in their usually-constant meal hunt. After a long and exhilarating performance the flock left us as abruptly as it arrived.

Throughout our day the sky filled with clouds. Some were mountainous in height, textured and clumped together between long leaner banks. Most looked wet, with dark hues so dense it could only be snow waiting to pounce. In places where clear sky yet prevailed, sunbeams illuminated craggy-faced billows so brightly they seemed to blaze with light.

Into the early night-time darkness Laurier continued along its path toward tomorrow's tasks, hoping that it would not become the Flying Dutchman of the Arctic – forever condemned to sailing endless courses in search of work it never finds.

Eric W. Manchester

THREE UP. THREE DOWN.

ABOARD CCGS SIR WILFRID LAURIER

Chukchi Sea.

Passing 71° 34' N. Latitude. 155° 47' W. Longitude.

Sunday, October 07, 2007

This seems to happen so seldom that it is noteworthy when it does. But, it shouldn't come as a surprise. From cute bubblied to distinguished grey-temple (and some fax machines), an entire industry delivers it with colourful moving graphics, taking such great pains to explain causes and describe the probabilities that sometimes we even believe we understand it. The weather. The weather forecast, to be specific. Oh, we mostly hope that it will come true – but secretly know that we'll be disappointed in the end. And, with good reason – I've gotten mightily soaked on my sailboat by a ten percent chance of precipitation. But, not today. This was a moment of redemption for every weather forecaster who ever ruined someone's special day (like their eviction, funeral or public execution).

The reason we earlier turned our backs on Barrow Canyon to steam a couple hundred miles away, then return, was because "They" promised better weather later. Well, whoever "They" is (or are, if they have multiple personalities), "They" delivered what the forecast implied. By morning we approached Barrow Canyon in almost pleasant conditions. The gentle 4' swells and fluttering 15-knot wind nearly compensated for the -3°C air in which the deck crew prepared to tackle an aggressive to-do list.

That's not to imply that the day was idyllic. Far from it, but it was so improved from when we first pummeled our way through the other day that working here no longer looked like a war of attrition. The sky wore its usual heavy overcast in the form of big, wet, thick banks of clouds. Here and there, skylights let tantalizing sunrays through to the sea, which mostly were smothered by transient fog banks decorated with periodic snow flurries. Later in the afternoon, while Laurier's crew still toiled on deck and in the RHIB, the squally grey fog banks gave way to serious snowfall containing those big Rockwellian snowflakes that epitomize winter at its nostalgic best.

Barrow Canyon, under the Chukchi Sea northwest of Alaska, isn't so much of a wild-west-ambush kind of steep-faced chasm as it is a broad, gently-sloping depression in the sea floor. It is some eight miles wide, runs about 100 miles in length, and has a water depth of 150' at its top edge, descending to nearly 1,000' at its lowest spot. Within those casual confines, the research team from Japan (JAMSTEC) collects a wide variety of information via three buoyant 600' arrays of scientific devices anchored to the sea floor. CCGS Sir Wilfrid Laurier had the task of finding and replacing the units, which have been in service here for the last one or two years, with fresh ones being assembled on its welldeck.

Finding the submerged apparatus isn't always easy. While their positions are accurately plotted at the time of their deployment, some have been known to travel short distances in undersea currents that are stronger than expected; some have been damaged and are lying

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on the bottom; and, others simply vanish. Once Laurier is on-station, a transducer is lowered over its side and instruments onboard transmit the technical equivalent of “Howdy, is anybody home?” in hopes there is a prompt reply – signifying that a buoy is ready to beam up. From there, several more contacts are made to precisely determine the unit’s location – which could take a half-hour or longer. When buoy, ship, observers, RHIB and deck crews are ready, the release code is transmitted and all eyes scan the ocean’s surface for signs of success.

That’s how it’s supposed to go. Mostly, it does. But, not with the first catch of this day. After an hour of unsuccessfully searching for the mooring using conventional approaches, there was concern that it had succumbed to its environment, or that the canyon slopes were interfering with the transducer’s signal. In a last bid to locate the scientific bundle, Laurier positioned itself almost directly above where the unit should be (not usually good for ranging) and got a reply to its hail.

By day’s end, crews from Laurier and JAMSTEC retrieved all three long-tentacled arrays and deployed three new ones – a big undertaking considering the amount of time needed to locate, retrieve, assemble, and deploy each complicated rig. Through the day, each success was rewarded by steadily improving conditions, until work finished in barely ten knots of breeze and hardly-noticeable two-foot swells. Apparently, some good deeds do go unpunished.

Beneath broken clouds dispersed across a clearing sky, Laurier departed Barrow Canyon on a six-knot overnight journey to early-morning science stations farther to the southwest. After so much time spent on a vacant seascape, out of sight of land, the faint glow from the lights of Barrow, Alaska seemed surreal on the horizon as we passed.

HAPPY THANKSGIVING

ABOARD CCGS SIR WILFRID LAURIER

Anchored. Barrow, Alaska.

71° 17' N. Latitude. 156° 49' W. Longitude.

Monday, October 08, 2007

Happy Thanksgiving! It didn’t begin that way, but by the time the day ended we were grateful for more than the special dinner. Our smooth, seemingly motionless overnight transit dawned to lumpy 8’ seas in driving 30-knot winds that made the -5°C air seem all the more frigid. In fact, it made it feel exactly like -15 (wind-chill). On a brighter note, the crisp air resulted in a clear sky decorated with occasional wispy clouds.

The good news for the day: we had just one big buoy array to find and retrieve. The bad news: despite its gadgetry saying it released from the sea floor mooring, its colourful floats never appeared at the surface. The worse news: extensive dragging didn’t locate the several-hundred-thousand dollar apparatus.

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By lunchtime Laurier was still station-keeping in building seas. One final drag was attempted, paying out nearly all the cable the deck winch contained and drawing it around and back in via an untried pattern. The main idea for all the cable being drawn across the sea floor was that it might encounter the submerged buoy and knock it loose from whatever was preventing complete separation from its mooring. Nearing the time when it seemed reasonable to declare the buoy lost, tension came on the cable – but still nothing surfaced. When the cable was wound back onto the deck winch, it was discovered that the grapples hooked parts of the undersea apparatus and brought it along to the surface. That is when the crew noticed that the floats, which should have carried the buoy to the surface, were smashed. When the JAMSTEC crew extracted the data from the device's computer, it told them that the floats had imploded while the rig was descending to its post more than one year ago, resulting in it not being held upright as designed – meaning that it had essentially been out of its intended service since shortly after it first got wet. Persistency paid off in that search effort, as did a modicum of luck, to beat the increasingly long odds of finding the device.

Most of the day was spent on retrieving that buoy, instead of just part of the morning. Consequently, the scrumptious Thanksgiving dinner (turkey, ham, pumpkin pie) created by Bertrand and Toby was served during our rollicking transit toward our night's anchorage. Later that night, Laurier lay peacefully at anchor in front of Barrow, Alaska – mostly sheltered from the 20-knot wind. The small community was ablaze with lights spanning its length and breadth – looking rather metropolitan in the -8°C night.

A MILESTONE

ABOARD CCGS SIR WILFRID LAURIER

Chukchi Sea.

Passing 70° 59' N. Latitude. 161° 42' W. Longitude.

Tuesday, October 09, 2007

Good Morning Barrow, Alaska! Laurier and company were treated to a restful anchorage – a welcome break from many days and nights of hallway-ricochets and bunk-balancing. Overnight, Barrow's waterfront warmed to -5°C. A ten-knot breeze gently stirred the pre-dawn snowfall that blanketed the townsite and its sub-zero sea.

Long past when more was expected, a weak blush won out over the lingering morning darkness. That faint illumination was enough to spur activity among a dozen anxious folks, and put plans into motion by Laurier's deck crew. Most of the science complement, and the ship's helicopter crew, were leaving Laurier here to catch flights back to their far-flung homes. Once the illumination qualified as first light, Laurier's RHIB ferried departing passengers and kit to Barrow's beachfront landing, from where they could make their early-morning way to the airport, or to meager hotels for those having to wait for a later freedom bird. Before the RHIB's shuttling ended, the ship was flashed up, eager to get underway for the lone science station remaining to be serviced on its Arctic to-do list – a 24-hour run from here.

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As the morning brightened Barrow, it became obvious that there is less to the town than its blaze of lights implied. By night, it fairly glowed from a bright saturation of electric lights, which gave a glowing breadth to its place. Daylight showed it to look similar to Cambridge Bay, way back there on Victoria Island (population approx. 1,500). Several radio frequencies came alive with local prattle – some in English, but mostly native. In marked contrast, for the past nine weeks Laurier's bridge heard very little radio traffic – except for a brief time when Inuvik Coast Guard Radio was in range, or when atmospheric conditions randomly directed far-off chatter through our receiver.

It wasn't just its crew that was eager for Laurier to depart the anchorage. Reportedly, local native hunters were concerned that the ship's presence could interfere with the itineraries of the whales for which they waited to kill. Apparently, whaling is alive and well in this far-flung corner of North America – no doubt packaged as perpetuating some form of traditional lifestyle. Since the hunt isn't essential for food (not here in the 21st century), and high-speed powerboats and bullets are now the weapons of choice, explain to me exactly which traditional lifestyle is being perpetuated by hunting an endangered species? If instead, you put a bunch of hungry guys in kayaks, armed only with harpoons, to go after a whale that often fights back, then maybe – maybe – you're perpetuating somewhat of a defensible lifestyle. OK, I don't believe that version either.

Sunrise officially came at 0923. It arrived with flare, energy and brilliance. The fireball first peeked, then fully launched over the black horizon, reaching past low-hanging wispy clouds on its way to preside over an overcast sky. Soon after Barrow disappeared astern, the dreary sky dissolved into limitless altitudes of blinding sunlight. That life-sustaining orb was bright, but it delivered little warmth, radiantly reminding us of our latitude and the season (it was a cold light, as opposed to a dry cold). At high noon, our sun hovered less than two hand widths above the horizon – that being its day's highest point of command – from there it would, day by day, settle into continuous night.

Hours later, as Laurier continued its long southwesterly transit surfing gentle 4' swells, a noticeable hush cloaked the ship. The absence of our departed shipmates suddenly resulted in fewer people to excuse past in stairways, and made the officers and crew messes less animated during meals – the best seats now always available (32 seats, no waiting!).

By early evening the air temperature nearly broke even against the freezing scale, the wind was on the rise, as was the swell. The distant horizon was no longer a fine smooth line. Instead it undulated and rolled in shape with the swells going over it. Heavy overcast resumed its familiar heavenly dominance, hastening a night-time which shrouded us before 2000.

This was a significant day. It marked the moment in Laurier's long and intensive Arctic patrol when, for the first time in nearly four months, it began to head for home. Our long escape route down Alaska's northwest coast was reportedly clear of icy obstacles. Barring anything

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unforeseen, for the next two weeks the ship's course would be plotted with only one destination as its goal – Victoria, British Columbia, Canada.

IN THE CHANNEL

ABOARD CCGS SIR WILFRID LAURIER

Chukchi Sea.

Passing 70° 31' N. Latitude. 167° 15' W. Longitude.

Wednesday, October 10, 2007

As we moved farther south and west last night, the temperature warmed to -2°C and the easterly wind steadied at 15 knots. During the night's final hours, blowing snow deposited enough fluffiness on deck that the crew had to shovel it overboard – while resisting the urge to flop onto their backs to make snow angels on the welldeck. By morning we were still in the Chukchi Sea, but well southwest of Barrow, Alaska, almost looking straight down through to the Bering Strait - roughly halfway between points Barrow and Hope on the Alaska mainland.

We had one last sonar buoy to pick up this morning. We arrived on-station early and quickly found the device's location, but then had to stand by two hours for daylight to follow the 0930 sunrise. Hopes were high that this small kit would be a quick grab in these good conditions, so that we could promptly continue our trek to Dutch Harbor. But, the first release attempt followed a common theme – no joy. The gadget gods showed mercy on our plight by firing the back-up release mechanism – but nothing popped to the surface. At about the time the dragging gear was sure it was going for a frigid dip, the buoy casually appeared on the waves. For no obvious reason, the thing just took its time coming up. In short order, the malingering buoy was onboard Laurier, and not a moment too soon – the wind and seas had by then worked themselves up to 30 knots and 6' respectively.

We expected to depart for Dutch Harbor straightaway - which would have put us there 1/2 day early, but we hove-to near the mooring site all day - in a 6' slop. The hold was re-arranged, and as much deck cargo as possible went into it while we were still in fairly good weather conditions. Once we go through Bering Strait, things can get rough in the Bering Sea toward Dutch Harbor.

The weather forecast still looked good. In fact, we might get a push from big northerlies, but by late in the day it was all still blowing out of the east. There is little chance of ice impeding our exit as the nearest is hundreds of miles north of here. Once we get going, Dutch is a four-day run from here.

Today contained another milestone. At 1900 (Alaska Time), Laurier turned its back on the Arctic expanse and headed south for good – its far-north season was done. Our course will now remain southerly in nature until we get back to base in about two weeks. Many of the crew now say they are "in the channel", in reference to being focused on heading for home.

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Well into the night, 20-knot wind and 8' swells helped Laurier along its course beneath a steady snowfall. The ship often pushed broad sheets of tumbling frothing waves ahead and to the sides as it ran down the faces of the swells that lifted it by its stern. Laurier is a little livelier on the waves than usual because it is lighter from having only about one-third of its one-million litres fuel capacity remaining. Once we top up the tanks at Dutch Harbor, the ship will squat a bit sturdier on its waterline.

After more than three months fulfilling the priorities of many others, tonight Laurier sailed for just itself – homeward bound.

THE CIRCLE

ABOARD CCGS SIR WILFRID LAURIER

Bering Strait.

Passing 66° 33' N. Latitude. 168° 24' W. Longitude.

Thursday, October 11, 2007

Our long haul to Dutch Harbor continued with the aid of 30-knot winds and 8' swells pushing us southward. Foamy streaks off wavetops streamed across the sea, windblown toward not-so-distant Siberia. Sunny breaks shining down onto the Bering Strait punctuated an otherwise somber sky. Last light faded around 1930, followed by brief spats of fog and snow. Laurier maintained its steady rhythm of lift, creak, surf, groan and shudder – reassuring all onboard that we were progressing along our track.

At 2300 (Alaska Time), we crossed the Arctic Circle. There was no speed bump or day-glo painted line to mark its delineation of north and south, yet crossing it closed this chapter of my journey as demonstrably as any gate slamming shut behind Laurier's stern. My nine weeks traversing the western Arctic seemed to pass in shorter time than it totaled. I want some of it back, and this time I promise not to waste precious moments of it sleeping, eating, socializing or just gazing at... everything. With the crossing fresh at hand, I admit to an overwhelming bittersweet feeling of accomplishment and sadness. There's so much more to see that I will now not witness; places to tread at which I will now not marvel; feelings of awe that will no longer imbue me – and just as poignantly, heartbreaking realities that I'll now not feel. Perhaps, my time up there will not come again, and that likelihood fills me with a profound sense of loss.

HIGHLIGHTS, HEARTBREAKS & HOMECOMING

ABOARD CCGS SIR WILFRID LAURIER

Bering Sea.

Passing 62° 40' N. Latitude. 168° 19' W. Longitude.

Friday, October 12, 2007

Our southbound transit of Bering Strait concluded sometime during the long night, ruling out the chance to photograph Big and Little Diomedé islands – the uneasy neighbours staring at each other across the narrow passage separating Russia from USA. While I slept, Laurier

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passed within 11 miles of Russia (24 miles from its land mass); opting not to drive along the boundary line as some past skippers reportedly did just because it was there. I awoke, without needing to learn a new language and a gulag's postal code, to a crisp 0°C morning of gentle, low swells lifting our beam and a relaxed 12-knot easterly breeze. In the distance, weighty clouds were supported off the horizon by wide bands of sunrays angling toward the sea. Overnight, the ice-glaze from many days of freezing spray melted off Laurier's bulwarks and rigging, leaving only patches of persistent snow clinging to a deck crane and the ship's RHIBs.

With the Arctic astern, many things from my time farther north stand out as highlights and heartbreaks – so many more than this space allows.

HIGHLIGHTS

- Vastness of the Arctic: wide, open space so vacant that Saskatchewan is crowded by comparison.
- Genuinely friendly people, especially the children.
- The gopher-like Sik-Sik near Bernard Harbour that was as curious about me as I was of it.
- Polar bears, which epitomize the Arctic.
- The whales that waved their flukes at us in the Beaufort Sea.
- Northern Lights that swirled and streamed for as far as we could see.
- The 1,000' snow-dusted bluffs that define Bathurst Inlet.
- Hiking up a several-hundred foot high promontory overlooking Holman, its long, narrow anchorage and the vista of ragged coastline into Amundsen Gulf.
- Beaufort Sea so crystal clear at Sachs Harbour that we could see our anchor lying on the bottom, some 50' below.
- Hiking an endless valley, in a silence so complete that all I could hear was the southern-latitudes stress leaving my pulse.
- The resilient wildlife and foliage vividly alive in such a hostile place.
- The researchers who come north year after year, to work around the clock gathering clues to our past and future.
- Witnessing the dangerous, exhausting work of CCGS Sir Wilfrid Laurier crews, sustained over such long periods, without fanfare, which they consider a routine way of life.

HEARTBREAKS

- Younger and older generations' hopelessness about a future trapped in purgatory between traditional and modern worlds.
- Generally dysfunctional communities struggling with alcohol and drug addiction, teen pregnancy and suicide at levels unimaginable in the south.
- A breath-taking landscape littered with abandoned structures, vehicles and materiel, matched by garbage-strewn communities.

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- Hearing educators say that barely one in 100 students has any academic future, and that very many high school students read and write at the grade one level – and don't care.

And, since it is now more real than just a mark on my calendar, there are some things that I'm looking forward to about getting home:

- Properly thanking my spouse, whose support made my journey possible.
- Seeing family again. (While I was away, my grandson turned 15 and got a girlfriend; my son and his partner learned they're going to have their first child).
- Being able to walk more than 272' (ship's length) in any direction.
- Fixing our van's transmission, which died the week I left town.
- Going sailing (longing for a quiet, engine-less cruise).
- Getting a haircut (or at least stylish barrettes).

By late evening, Laurier continued toward its Dutch Harbor fuel stop, swathed in a temperature little-changed from the morning's freeze. Snow steadily fell in sufficient quantity and density to blanket the decks, making the weldeck appear much brighter than its usual midnight shadow. The wind was now out of the north at 20 knots, heralding the approach of the forecasted weather front.

CRUISING

ABOARD CCGS SIR WILFRID LAURIER

Bering Sea.

Passing 58° 50' N. Latitude. 167° 41' W. Longitude.

Saturday, October 13, 2007

Mercifully for all potential shovellers, the snow falling most of last night melted away soon after contact with the decks, no doubt hastened toward its watery end by the +2°C air temperature (+8°C sea). This morning dimly dawned, shrouded in very heavy overcast with menacing storm clouds directly astern of us. While the northwesterly wind gusted between 25 – 30 knots, the swell hadn't yet caught up with its force and gave us a tolerable ride over the 6' peaks. But, a hint of what might yet come lay in the sea's demeanour – so angry dark that its whitecaps seemed electric-light bright.

Laurier is now well into cruise mode. No more stops for science or beacons, most everything is stowed that needs to be – and, hopefully done with politicians' photo ops. Just one planned tryst with a fuel pump, then on to Victoria. At this early point the weather is building as forecast, which is good because it pushes us in the right direction. Running with the swells is far more comfy than beating into them, or taking them on the beam. Such cooperative seas make it less arduous and hazardous for the crew attending to the ship's needs on deck, in the belly of the chock-full cargo hold, and in the compact foc'sle.

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Despite being on a body of water named sea, we continue to sail on shallow depths – this section of Bering Sea being barely 30 metres deep. This has been a commonly odd aspect of voyaging nearly everywhere in the far north – that and no neighboring vessels to avoid.

Each passing minute of Latitude took us farther away from the Arctic, the most noticeable evidence being warmer air temperature (+4°C long after sunset). Our night-time heavy overcast was broken by sky breaks broad enough to expose myriad twinkling clusters of stars. By bunk time, the wind – reduced to 15 knots - still generally pushed us where we wanted to go, although it now came more from the west. The expected weather conditions were changing. If they were changing in our favour was yet to be revealed.

OUT OF LUCK

ABOARD CCGS SIR WILFRID LAURIER

Bering Sea.

Passing 55° 18' N. Latitude. 166° 47' W. Longitude.

Sunday, October 14, 2007

This morning we learned that luck ran out for Luck Dragon, the sailboat from England that visited us way back on August 22nd in Simpson Strait, beneath King William Island. Jeffrey Allison (and crew) was sailing around the planet aboard his 23-year old, fibreglass Bowman 49, by way of Iceland, Greenland, the Northwest Passage, Nome Alaska, Japan and the south Pacific – planning to get home in time for his 70th birthday in April 2008. Apparently he made it to Nome, but not much farther. What then happened is not entirely clear, but this morning we picked up the US Coast Guard broadcast warning mariners about Allison's abandoned sailboat adrift in the Bering Sea – some 30 miles from our position. It's our understanding that a few days earlier a calamity befell Luck Dragon sufficient that its crew was airlifted off and the boat forsaken. The speculation is that the nasty weather we're avoiding found Luck Dragon, ending Allison's circumnavigation dream – an outcome all too common for pleasureboaters who challenge the Arctic and these Bering waters.

Our day arrived on 30-knot southerly wind (gusting 40) coming right at us, instead of pushing from behind as was forecast. The aggressive wind quickly piled up shallow Bering Sea into 10' swells – punctuated by larger sets - that tried to thwart our progress toward Dutch Harbor, which was still another 200 miles south.

Following ten weeks of voyaging mostly alone, we now had to be particularly vigilant for vessel traffic. After lunch we passed through more than a dozen commercial fishboats working their territories amidst the heave and roll of the sea. As we passed close to one fishboat I marveled at the extremes of its ride. One moment I was looking straight across at its exposed keel as it climbed over the top of a swell, and the next all that remained visible was its mast and antenna as it plummeted into a trough – a routine it repeated several times each minute. When another boat went behind us – cross-wise to the swell – it rolled so far over that the top of its wheelhouse and aft deck momentarily looked right at me. Since this

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wasn't a stormy day for the Bering Sea, it was easy to imagine how the Deadliest Catch television program was spawned in these waters.

Over the course of the day, the warm morning temperature increased to an almost-balmy +5°C under big patches of blue sky. Into the evening Laurier slowed to six knots in hopes that the weather front ahead would pass by with us out of its reach. Thanks to now being farther south, we could see more of our surroundings because last light was nearer to 2100. Big, heavy wet clouds on the horizon hinted at what lay ahead. The wind gradually eased to 15 knots, but the swell maintained its mass, losing its frothy top in the diminished wind. Laurier mostly found a cadence through the lumpy sea, but periodically it pitched high up against a series of higher swells, then shuddered and writhed into the next. Experiencing that ride in the crew mess resembled a scary movie scene, where the dishwasher door opened and closed on its own, stacks of dishes in their spring-loaded holders squealed up and down, and the mess chairs swiveled in chaotic choreography. And, bedtime was a lurching, twisting adventure.

BIG GULP

ABOARD CCGS SIR WILFRID LAURIER

Dutch Harbor, Unalaska Island, Alaska.

53° 53' N. Latitude. 166° 32' W. Longitude.

Monday, October 15, 2007

Sometime during the lumpy night things smoothed out enough to foster my sound sleep. As it turned out, I didn't miss anything by not seeing the dawn. The one we got was the closest thing to not being one at all, except for its murk being a smidge brighter than the night's. Fog and rain alternately swept past, propelled by 20-knot winds that often spiked above 30. Thanks to the wind and swell's cooperative direction, Laurier enjoyed a gentle ride over the final hours to Dutch Harbour on Unalaska Island.

As we slowed to be on time for our appointment with the marine pilot who would guide us into Dutch Harbor, high-bluff rugged islands – some with snowy mantles – sprang up to punctuate the bland Bering Sea. Some jagged peaks reached beyond what their foggy collars let us see. The islands leading to and around our fuel stop's entrance were so tall that it made the harbour appear much smaller than it actually is.

In contrast to Laurier's gentle ride, the approaching pilot boat, Saratoga, which squat low in the water, met each swell head on, burying its bow and sending up bigger spray than its size seemed to warrant. For most of its journey toward us, Saratoga's wheelhouse was obscured behind massive sheets of spray and its decks were frequently awash. At a pre-determined moment while still underway, after it turned to match our speed and direction, Saratoga leaned in to rub hulls with Laurier so the pilot could climb our Jacobs ladder and scramble onto the welldeck.

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Once past the long curling spit that forms a natural breakwater on one side of the harbour, we could see the true extent of the port. Within its expanse rested several large deep-sea cargo ships; a drill-rig ship; one very long, tall container ship; fleets of its famous crab boats; and, a few fishboats that rivaled Laurier' dimensions.

Looking like an afterthought, a single paved airstrip lay stuffed onto a short flat stretch at the foot of a steep incline – each of its waterfront ends pointing at not-too-distant snowcapped mountains. Space for the runway was so scarce that vehicle traffic on the road hugging its one end had to be stopped when aircraft landed or took off. Planes on final approach passed Laurier, moored to the fuel dock, at eye level with its bridge – sometimes lower. The aircraft seemed so close to the ship that I often sensed Laurier had the urge to lean away from their flight path.

Our remaining few science crewmembers disembarked here, to get flights home to Japan, and in one case to relatively-near Homer, Alaska. Because of the fishing fleet's high demand for flights, our departing passengers faced waits of a week or more until an airline seat would be available.

A few thousand residents are spread over the two adjoining communities of Dutch Harbor and Unalaska (each having its own post office). Remnants of WWII bunkers and fortifications dot hillsides and the waterfront, needed when Japanese forces occupied parts of the Aleutian Islands (and reportedly bombed Dutch Harbor). Eagles are as numerous as gulls. They are everywhere around town and the waterfront, patrolling stream banks, garbage cans, and roosting on street lamps and rooftops. A vintage Russian church is a much-photographed area landmark.

What surprised me about Dutch Harbor is its sheer volume of shipping container traffic. Stacked wherever space exists, hundreds of steel containers await their next assignments. A steady parade of trucks, running around the clock, hauled loaded containers to fill the one big container ship moored along the industrial waterfront. An undesirable effect of the continuous conga-line of trucks, over gravel roads drenched by all-day rain (and hail), was the drifting slime-mud mist that stubbornly clung to every surface, thing and person it enveloped.

While its off-watch crew walked, shopped, phoned home, tapped into local high-speed internet, dined ashore and reportedly had a social beverage or two, Laurier took a long drink at the fuel dock. After more than eight hours of pumping, Laurier was some 441 metric tons heavier in the form of 525,000 litres of fuel needed to top up its tanks. Will that be cash or credit card? We were allowed to remain tethered to the fuel dock overnight, on the promise to be gone early in the morning so that a fishboat – bigger than Laurier – could belly up to the bar.

Eric W. Manchester

After days and nights living on an active seaway, now being moored alongside a motionless wharf in a sheltered harbor made it almost unnerving to crawl into a bunk that didn't try to jump out of the way at the last moment.

PEAKS AND DEPTHS

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 54° 00' N. Latitude. 161° 59' W. Longitude.

Tuesday, October 16, 2007

What a difference a dozen hours make. When Laurier slipped its lines and departed the fuel dock at 0615 there was but a hint of the day yet to evolve. Getting out of Dutch Harbor entailed beating through some lumpy seas until we could resume our homeward course. Once we turned onto that magical heading, wind and swell were again in our favour. Now sitting heavier on its waterline (from the added fuel), Laurier settled into a gentle rhythm as it headed toward the morning sky. Here's the difference the dozen hours made – instead of the gloomy overcast we'd become accustomed to, today featured big, bright clear patches of sky so cheerful in appearance that it was easier to forgive the Dutch Harbor mud fog that still stained our shoes (and everything else). With a morning temperature of +6°C, we knew we weren't "way up north" any more.

Until well past noon our course was bordered by a long string of Aleutian Islands piercing an otherwise barren seascape. These Aleutians, part of the Krenitzin Islands (group) are bleak and craggy, many with sharp snowcapped pinnacles – all looking fresh from the forces that created them. Akun Island's hoary peak thrust so high into the passing weather that it featured blowing snow and fog trailing downwind from its top like an overgrown burgee. In the distance ahead lay rugged Ugamak Island, its high stark face marking the gateway between Bering Sea and Pacific Ocean through Unimak Pass. From that demarcation point, weather gods permitting, it would be one long tack to Victoria (with a short dogleg at the end).

But, before we could reach that door to home, there were so many close encounters that kith and kin lost their forefront positions. Whales! Humpback whales - maybe 100 of them. The pod spread for miles in all directions, leisurely travelling across Laurier's path. The sea was abloom with their exhaled plumes of spray. Singly, and in small groups, the whales surfaced to breathe – revealing only tantalizing glimpses of their shiny bulk. Devoid of the high dorsal fin we see with our resident Orcas, these Humpbacks appeared as long dark shapes briefly slicing the sea's surface. Some swam close to Laurier, and a few that were more curious than the others glided within hailing distance of the ship – one submerging just a whale's tail off our beam. Every now and then we were captivated by big flukes waving at us from one of the giants setting up for a deep dive – then savoured every moment of its unhurried descent.

Eric W. Manchester

By midday, thousands of seabirds criss-crossed Unimak Pass, circling and diving through their daily chores. Many soared on Laurier's slipstream until hunger, homing instinct or boredom with our slower speed led them away to other pursuits. By then the sky was ablaze with sunshine, which for the first time in weeks showered us with warmth – so much so that Laurier opened its hatches and windows to air out. The crew toiling at deck maintenance was a reminder that this was no pleasure cruise, but Laurier's easy ride along 6' swells with sun on our faces made this portion of our journey almost seem like one. For much of the afternoon, many of the deck crew – and me – went topless, having left off our caps and toques.

This day included two firsts, of sorts. After months of voyaging alone, we were now on a shipping superhighway. A steady stream of ships – general cargo, car carriers, container ships, log haulers – came over the horizon toward us, or overtook us, on their great circle voyage between North America and Asia. Eventually, our rhumbline would take us along our own less-travelled path, but for awhile having other ships to watch made the ocean's expanse seem smaller. Exiting Unimak Pass, into the Pacific Ocean, ended countless miles sailed on shallow waters. In scant distance, Laurier went from cautiously navigating keel-hugging 40-metre depths (and less) to joyously cruising on a 2,200-metre cushion of brine.

Into the night, Laurier continued its single-minded course, helped along by 16-knot breeze on its stern and bathed in starlight from millions of twinkles filling big patches of clear sky.

WEATHER, OR NOT

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 53° 06' N. Latitude. 155° 28' W. Longitude.

Wednesday, October 17, 2007

We're committed now. There's no place to hide. One day's travel into the Pacific Ocean, with about six more to go, means that we either avoid the bad weather through cunning and luck, or ride it out through cunning and luck. Another possibility is that there isn't any bad weather to worry about, but odds of that are low here at this time of year. So, it's really back to us being cunning and lucky. Fortunately for us, Captain Thomas (this crew's commanding officer), self-described as Capt. Fairweather, appears to be blessed with – wait for it – both cunning and luck when it comes to shepherding Laurier home to its Shoal Point base.

The day began under oppressive wet overcast all around, but the very gentle, low swell, negligible wind and +6°C air made for a comfortable ride. This was unusual for these parts in October, all the more reason to keep a weather eye on the length and breadth of this corner of the Pacific. The benign conditions could easily lull a sailor into fatal complacency, because the reality is that Laurier was threading itself between stormy ridges and low pressure fronts. Our immediate neighbours were two storms and a hurricane. Periodic weather reports and forecasts were major factors in our deciding when, where or if to speed up or slow down, to maintain our position just on the edge of the harm's way that was ahead

Eric W. Manchester

of and behind Laurier. If the storm ahead stalled, or the one trailing us sped up beyond our top speed, then our run for home could be wet and wild in a pummeling kind of way.

In the meantime, we enjoyed the calm transit. More than 1,000 nautical miles from Victoria, we began seeing signs of home. After weeks of voyaging on waterways devoid of the drifting logs that are so prevalent a hazard at home, it's odd to begin seeing the occasional one drifting partly submerged in the Pacific's swells. Maybe we're closer than we think.

NEAR AND FAR

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 51° 30' N. Latitude. 144° 15' W. Longitude.

Thursday, October 18, 2007

Overnight our companions remained near. Besides cormorants, gulls and albatross our fore and aft low pressure cells kept pace with Laurier. Actually, it's the other way around. But, even on a ship the length of a football field, being out of sight of land quickly turns the vessel into the centre of a small universe - ours. When today revealed itself, big heavy overcast draped the horizon in all directions – so stout that the sun's best showing was only a faint ball of light. Our proximity to the blusters we sought to avoid was obvious in the not-too-distant mammoth cloud banks trailing rain curtains across the sea. But, we still sailed in our own 20-knot, storm-free environment.

It wasn't all even-keeled voyaging. The wind-roughed swells comprised a peculiar mix of irregular heights and haphazard spacing, such that it made for an awkward staggering ride. For a time, the swells and the wind-waves on their tops travelled in opposite directions, making the view directly ahead of Laurier seem an optical illusion.

The blip on our radar screen was no illusion. There, seemingly in the middle of nowhere, beyond where our eyes could see, a vessel steamed along the reciprocal heading to our course, directly at us. By the time its superstructure cleared the horizon, its AIS data appeared on our monitor, explaining that it was the tug, Seaspan Commodore. Once it was within radio range, we learned that it was bound for China, via Dutch Harbor, towing a barge (then bringing three back home). Of greater interest to us, was learning that the tug spent two days hove-to, riding out the weather front that we are chasing.

Laurie's life contains little respite. As soon as the crews change next Wednesday, the ship begins an exhaustive program to maintain navigation beacons all around BC's inside waters. For several days now, this crew's work focused on preparing for its turn manhandling everything from spar buoys to long-legs. As tough as Arctic beacon repair work is, buoy-tending can often be a more physical endeavour – especially considering that long-leg buoys can weigh seven tons, not counting several years' growth of barnacles and mussels.

Eric W. Manchester

By 1600 our sky brightened as most heavy clouds had been pushed well back to the horizon or over it. Into the evening our 6' swells grew into 12-footers, propelled by a 20-knot north wind. Our welldeck remained soaked from the soggy spray blowing across it. Much later that night, a half-moon cleared the gloom, its reflection on the water danced the waves toward us. As we closed in on 900 nautical miles (1700 kms) from Victoria, home felt oddly near yet far.

LOWS AND SIGHS

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 50° 56' N. Latitude. 140° 24' W. Longitude.

Friday October 19, 2007

In the blink of a weather eye Neptune's benevolence can turn malevolent, especially for mariners (like us) voyaging on the rim of low pressure cells and their next of kin, Gale, Storm & Hurricane. Throughout last night our nautical world became ever more tumultuous and wet. The wind edged up over 30-knots. By 0300 Laurier was being overtaken by sporadic sets of 20' swells, their breaking around the ship kept the welldeck flooded. Consequently, sleeping was mostly done in shifts, not trading time with other crewmembers, but instead alternating between 20-minute slumber and fits of startled almost-consciousness. Before first light, 40-knot wind (x 1.86 = kilometres) was smoothing Laurier's corners. The Pacific Ocean didn't seem so large, hemmed in as it was by fog and rain that conspired to subdue our +8°C day.

While a lot of Laurier's observable day-to-day routines are dependent on weather and nature of the tasks to be accomplished, the ship's overall operation depends on a cadre that seldom sees daylight. For most of this behind-and-under-the-scenes component of the ship's company, daily jobs change little regardless of whether the ship is in port or at sea. There are supplies to order, electricity and water to produce, maintenance to complete, health needs to consider, and everyone to feed. And, god knows there is an endless stack of paperwork to sift. Most of that work happens unabated regardless of weather conditions.

Laurier became the object of avian interest on two occasions today. One delighted and the other saddened those who watched. A Canadian Forces Aurora surveillance aircraft burst through the low ceiling, heading across Laurier's track. The plane's subdued colouring gave mute evidence to its presence as it banked to make a lazy circle around the ship. After giving us the once-over, it pointed for elsewhere and throttled-up its departure, streaming long, black exhaust tentacles to mark its path away.

During a snarly part of the afternoon, amid rain squalls spattering big sloping swells, a lone Canada goose glided in from the gloom. For nearly an hour, that forlorn saturated creature repeatedly circled the ship acting like it wanted to come aboard – making numerous aborted approaches to the welldeck, flight deck, and even the wheelhouse. A few times the goose looked resigned to putting down on the rowdy sea, but each time it hovered down to toe-

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dipping altitude a sudden splash sent it flapping skyward. There were times when the poor wretch found respite soaring on Laurier's slipstream. But, over the miles, the goose gradually fell behind – farther and farther until its fatigued place above the waves was marked only by a gathering of gulls around it. Eventually, the low visibility that we were dragging with us obscured the goose's fate from our view, leaving only conjecture as to how it came to such a lonely end.

Much later into the night the wind dropped to 20-knots (you do the math). At some 700 nautical miles from Victoria we still tailed a low pressure front, dancing between two others, but now we were feeling its left-behind disturbance – illustrating just how fine a line we sailed between a waltz and rock 'n' roll. Just before midnight, the clouds broke open enough to display a starry sky, and to let the half-moon's light soften the nighttime mood. Maybe it was too much to hope, but perhaps our Canada goose found a way to see this moon-glow, too.

FASTEN SEATBELTS

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 49° 57' N. Latitude. 133° 44' W. Longitude.

Saturday October 20, 2007

Last night we enjoyed the gentle rise and fall of a diminishing wind and sea. By our +10°C morning, Laurier still ran with the weather, maintaining its stealthy position behind a moving bad-weather front. All those who know, remarked about how atypical were these benign conditions. They shouldn't have spoken so soon – or at all.

By mid-morning the swells lifting Laurier by its hindquarters were up to 15'. We sped up a few knots in response to the behavior of the hurricane ahead, and the storms all around. Just after lunch, the wind abruptly swung around to the southeast (nearly on our bow), and dropped to barely register any velocity on the ship's gauges. Big swells continued rolling in from the west, but without wind-driven tops they hardly bothered the resting seabirds.

The sky brightened beneath its high overcast, spreading an eerie hue across the horizon - so sci-fi movie-ish that one could believe we were nearing a rift in the space-time continuum that would plunge Laurier into 1941. For hours we cruised in negligible breeze, lifting and surfing on tall, relaxed swells. The surreal conditions prompted the ship's company to secure cabins and sharp objects for what surely lay ahead.

Shortly after the galley crew and stewards began preparing the aft deck for the night's barbecued supper, the wind strengthened sufficient to warrant deploying a windbreak along its starboard side. By the time our steak and prawns had their second turns on the grill, the windbreak was a full sail. Gulls and Albatross effortlessly followed in our aroma, needing only a few wing-flaps in the growing wind to maintain their soaring paths.

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When last light was long gone, the wind was a steady 40 knots, often spiking above 50 knots, more-or-less coming straight onto our bow. The swells hadn't yet grown to match the wind, but given enough time they would become equal partners in Laurier's discomfort. Wind exfoliating the ship sounded like a heavy freight train, which caused the wheelhouse to throb in a penetrating fashion. Our weather cunning and luck seemed to be waning. Fasten the seatbelts. We're in for a bumpy ride.

A MOVING EXPERIENCE

ABOARD CCGS SIR WILFRID LAURIER

Pacific Ocean.

Passing 48° 57' N. Latitude. 127° 16' W. Longitude.

Sunday October 21, 2007

Even if Gordon Lightfoot was never onboard a ship during a night like the one we had last night, his lyrics nevertheless accurately describe it. "Does anyone know where the love of god goes, when the waves turn the minutes to hours?" Not that anyone on Laurier was afraid. It was just that the fierce wind and driving seas made sleeping into an Olympic sport, bordering on an impossible mission. Overnight, Laurier bulled its way through 60-knot sustained winds and 18' swells (with 75-knot wind and 24' swells for longer than was necessary). The ship pitched and heaved through and over some very big and powerful seas. Often, after it beat its way through a crest Laurier would drop into an abyss, shivering along its length on landing. Some briny hills were so dense that we could feel the ship shudder to a near stop – writhing to find a weak spot to exploit. Despite all the portholes being dogged shut, some waves slapped with enough might to push rivulets and spray past the seals.

The crew tried all manner of wedges, braces and shims in an attempt to somehow stay on their bunks. Many times through the interminable night I was close to being launched from my bed, a result of the abrupt and sometimes multi-directional movement of ship and me. Everything that was not tied down, or stuffed into someplace secure, rolled, rattled, flew or crashed – office chairs included (but not mine – we came to an understanding before the really good thrashing began). Despite everyone's best home remedy to lock down self and possessions, no one got much rest, instead quasi-snoozing in short intervals between bull rides.

At 0200, Laurier stopped while the on-watch crew went on deck to close ventilation hatches, which were taking in seawater instead of exhausting air, and to generally batten down the hatches (yes, they really said that). For most of the wild night, Laurier's welldeck was aglow in phosphorescence from the seas that regularly washed over it.

Few crew appeared for breakfast, but I found that after a good all-night pasting the smell of bacon cooking was simply irresistible. Although, early-morning dining was an adventure all its own, what with nothing being on the level, and big swells exploding across the mess portholes.

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By mid-afternoon wind and sea regained their composure, having reduced to 20 knots and 10' respectively. At their first opportunity, fog and rain resumed harassing Laurier. With our new proximity to Vancouver Island, we now have plenty of other ships in our vicinity, mostly travelling much faster than us. After nearly four months of voyaging on its own, Laurier must now log onto the vessel traffic system that manages all commercial shipping traffic along the British Columbia coast.

Past last light the temperature remained a balmy +13°C, and the 100% humidity eliminated the last of my dry raspy cough (souvenir of the Arctic desert climate). On an inky black sea, so dark that the bow froth seemed brilliantly neon-powered, Laurier continued on its course for home base – expecting to arrive sometime tomorrow (Monday, 22nd). As we got closer to Juan de Fuca Strait, the volume of vessel traffic increased, and so did an erratic swell pattern. As we moved across shallower LaPeruse Bank, the swells stacked up higher and hit us on the beam, resulting in some hard knocks and violent shudders. Looks like my last night at sea will be another moving experience.

1345

ABOARD CCGS SIR WILFRID LAURIER
Alongside. Canadian Coast Guard Base
Victoria, British Columbia, Canada.
Monday October 22, 2007

Through most of my final night onboard CCGS Sir Wilfrid Laurier I remained wedged into my cabin's deskette, braced against broadside whacks from an ocean intent on having one last tantrum against our hull. After the previous day and night riding a bull in a blender, this wasn't anything remarkable – just your everyday oceanic bumpy wobble.

I felt compelled – beyond driven – to continue punching my computer's keys, chronicling my journey, for as long as the remaining hours and pots of coffee in the mess would allow. Seventy-six days was a lengthy calendar plot - too protracted for family awaiting my return – yet for me it passed with inexorable swiftness. Now knowing that Laurier was only a short strait and a sharp left turn away from my final jetty, I felt desolately unfinished and conflicted. I'm ready to go home, yet unprepared for this ending. When I crawled into my bunk around 0400, I felt an overwhelming fatigue for the first time during these 11 weeks.

When I awoke at 0900 Laurier seemed motionless on Juan de Fuca Strait's flat surface, fanned by mere zephyrs. Juan de Fuca isn't always so kind. At first, the strait was draped in long banks of fat billows connected by ribbons of wispy clouds, with patches of low-lying fog trapped among shoreline trees. But, the sky brightened with every inbound mile we travelled. Laurier's innards were refreshed by the +11°C air flowing through every hatch and porthole that could be latched open. After months of transiting vacant waterways, bereft of vessels and visible shores, Juan de Fuca Strait - defined by mountainous coasts and one of North America's busiest commercial shipping lanes – felt much too crowded and confining.

My dreaded left turn came in the afternoon. Laurier rounded Race Rocks Lightstation and pointed straight at its barely-visible destination. Seeming like a reward for weeks of fog and

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swells, bright sunshine flooded the now-clear sky; the breeze died altogether; and, the sea took on a mirror finish as we sailed the last few miles to Victoria's Coast Guard base.

Having been scrubbed and squared-away over the past days, Laurier was ready to come alongside. A few onlookers and a Coast Guard shore-party watched the ship inch its way toward, and then tenderly caress one of the very few wharves it touched since leaving port on this year's Arctic patrol. At 1345 the engines were rung off. After voyaging for nearly four months and covering some 14,000 nautical miles, Laurier was home.

Amid the city's noise and bustle that now overwhelmed us, in my head (and maybe heart) I kept hearing Stan Rogers' lyrics, "Ah, for just one time I would take the Northwest Passage, to find the hand of Franklin reaching for the Beaufort Sea. Tracing one warm line through a land so wide and savage, and make a Northwest Passage to the sea."

I was grateful, at that moment, for being alone atop the wheelhouse.

GRATITUDE

VICTORIA, BRITISH COLUMBIA, CANADA

Sunday, November 04, 2007

Home. Been here only two weeks. Already, the Arctic feels a lifetime past. My office is now spacious, motionless and level. My bed (no bunks here in landlubberville) is wide, with limitless headroom. And, I have three closets full of my "stuff" instead of one locker (again, landlubberville). Oh, and there's also that endless cacophony of vehicle traffic.

The only remaining connection to my odyssey seems to be the last 638 northern images awaiting my edit. That and the big net bag of my shipboard laundry over there in the corner. Well, there's also the Dutch Harbor mud stains on my shoes. There's all that, plus a folder of Arctic photos to post to my website. OK, in addition to everything I said before, there's... Geez, maybe I'm still connected – if not in reality, then surely in memory.

I feel privileged for having that opportunity to see, firsthand, far more than any daysail could ever reveal about life aboard Laurier. It was the most entertainment I ever had without actually getting a rash. I am grateful that the crews shared their patrol with me. Even when I did, they never made me feel that I intruded.

My sincere appreciation goes to the two captains and their crews who alternately share CCGS Sir Wilfrid Laurier throughout its continuous, year-round toil.

CAPTAINS: Mark Taylor, Norman Thomas

CHIEF OFFICERS: Steve Kennedy, Victor Gronmyr, Glen Ormiston

2nd OFFICERS: Ian Copping, Richard Marriott

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3rd OFFICERS: Ben Axmann, Alana Swain

BOATSWAINS: Gregory Swift, Tim MacLeod

WINCHMEN: Duane Allen, Andrew Copping

LEADING SEAMEN: Rod Parsons, Mike Hawley, Peter Lange, Keith Graham, Marc Paillefer, Kevin Vandoremalen

DECKHANDS: Owen MacLeod, Cathy Robertson, Mary LeBlanc, Tyler Ammerlaan, Devon Hume, Shannon Lorraine, Morgan Chisholm, Christina Grondin

CHIEF ENGINEERS: Randy Morford, Barry Rinas

1st ENGINEERS: Martin Lemoine, Gary Babin

2nd ENGINEERS: Laurie LaPlante, Eric Zwarich

3rd ENGINEERS: Chris Lawson, Andrew Lionais

ELECTRICIANS: Jakob Tengs, William Healey

OILERS: Robert Comin, Robert Wingham, Malcolm Meier, Matthew Bartilucci, Michael Volik, Nathalie Morrow

LOGISTICS OFFICERS: Miles Taylor, Donald Matthews

CLERK/STOREKEEPERS: Ralph Cruesemann, Dana Copley

CHIEF COOKS: Harold Steed, Bertrand Boisseau

COOKS: Herbert Lynch, Toby Martens

STEWARDS: Robert Rayner, Don Noade, Roberta Harding, Meghan O'Keefe

HEALTH OFFICERS: Jacqueline Callen, Marsha Duggan

ICE SPECIALISTS: Erin Clark, Rene Boisvert

ELECTRONICS SPECIALISTS: Peter Boerkamp, Graeme Kellow

HELICOPTER PILOTS: Glenn Diachuk, Dave Wigard

HELICOPTER ENGINEERS: Eric Meikle, Andy Graham

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My thanks go to the scientists fortunate enough to have their research hosted by Laurier, who freely shared their knowledge and passion about hunting for clues to our past and future.

SCIENTISTS: Eddy Carmack, Humfrey Melling, Koji Shimada, Nes Sutherland, John Nelson, John Morrison, Svein Vagle, Bon Van Hardenberg, David Hik, Ron Lindsay, Jonathon Poole, Hideyuki Kitabata, Akinori Murata, Tomoki Noguchi, Roger Francois, Maureen Soon, Kristina Brown, Jay Cullen, Tim Giesbrecht, Martin Renner.

My expedition happened because people believed that it was something worthwhile to support. I'm truly grateful for the generosity that helped me all along the way.

SPONSORS: Canada Council for the Arts, Nikon Canada, Jason Manchester Photography, Helly Hansen, Lowepro, DayMen Photo Marketing, Mark's Work Wearhouse, SanDisk, Future Shop, First Air, RoTec Communications, Manfrotto, Amplis Foto, Mustang Survival, Adventure Medical Kits, We Do Hosting.com, Cradoc fotosoftware, Canadian Tire, Gordon Hulme Realty, Dominion of Canada General Insurance Company, West Marine, Staples.

Jason Manchester, my son, (www.jasonmanchesterphotography.ca) designed and built my new website from the vaguest of my ideas, and then maintained it and kept my northern images flowing onto it while I was away. But, much more than the cyber stuff, Jason rejuvenated the adventurousness of my soul a time when I needed it most.

Mona Ferguson, my spouse, not only encouraged me to go on this expedition, she willingly shouldered all the homefront responsibilities – which turned out to be more than we envisioned. Her unwavering support was the foundation upon which my trip was built.

Special thanks go to Captain David (Duke) Snider, whose unbridled enthusiasm for sailing where water is crusty, and often solid, rekindled my long-ago love affair with our Arctic.

To each and every person who played a part in the best 76 days of my recent life – THANK-YOU!

ANOTHER 76

VICTORIA, BRITISH COLUMBIA, CANADA

Monday, January 07, 2008

That was quick. I've now been home for as long as I was away during my Arctic journey aboard the Canadian icebreaker, CCGS Sir Wilfrid Laurier. I may be home, but I'm far from settled.

These most-recent 76 days passed in a blur of readjusting to life larger than a ship's tiny cabin; Christmas preparations; a winter jaunt with my grandson aboard my sailboat; trying

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to make sense of what I witnessed in the Arctic; wondering how my temporary shipmates' subsequent southern patrols went; thinking about those who left Laurier to pursue civilian vocations; and, convincing my wife's cat that it is so my side of the bed.

Now, sitting here in a landlocked office below the 49th parallel, my time in the far north feels like a past-life memory. Worse, sometimes it feels like it never happened at all - despite my cache containing thousands of photos and volumes of notes, arising from countless interviews and experiences.

But, there are times when the Arctic is once again intensely real to me. Every time a southerner whines about a trivial thing in their have-everything world, I see the smiling faces of the youngest Arctic children who are still happy with practically nothing in theirs. When I see the teenagers around me throwing away their unlimited opportunities, I recall those far-north adolescents whose future is too-often a dead-end path to despair and suicide. Each time I endure some huckster trying to sell the value of buying yet another new something, I hear those old hunters explaining what it meant to their hamlet's survival when they were able to bag that one extra caribou. And, all the commotion about Boxing Day sales and cross-border buying orgies for all that must-have crap, reminds me of that Inuit woman's annual shopping spree down south – a six-hour flight, roundtrip – so she could purchase affordable groceries for her family.

Life's contrasts above and below The Circle are so striking – on every measurable level – that it seems inconceivable for it all to be in the same country. There's much more than climate change destroying Canada's Arctic. Perhaps that's why I'm so unsettled.

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