

Note: The following document was obtained from a Mary Sherman who was seeking information on her father. The subject of Page Communications Engineers came up and she send me this document. I have been unable to locate the author, Stan Tull, and as I didn't want this information lost, I am publishing it without permission. (Better to beg forgiveness than ask permission ☺).

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Greenland Diary by Stan Tull. (Link is no longer active.)

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Page Communication Engineers Alumni Greeland Diary

Stan Tull



Eskimo Camp



Page Office



Rest Stop



Work Break

INTRODUCTION

In 1958 the cold war was at its height. America lived in fear of being atom bombed by the Russians. To provide the earliest possible alert of enemy attack by aircraft flying across the polar region, the U.S. Air Force constructed the Distant Early Warning (DEW) Line stretching all across Alaska and Canada from Barter Island on the Arctic Ocean coast of Alaska to Cape Dyer in Newfoundland. The DEW Line was comprised of about a dozen high power radar stations linked together by then sophisticated and highly reliable tropospheric scatter communications. Data from these radar sites was relayed to continental United States command centers, providing the means for taking action to intercept the incoming aircraft.

The DEW East Project was established this same year to continue the DEW Line from Cape Dyer across Greenland to Iceland, thus providing a considerable enhancement in radar coverage and early warning capability. The Air Force contracted with Western Electric Co. for the construction of the new radar sites and related communications. Western Electric, in turn, subcontracted with Page Communications Engineers to do the initial siting and preliminary preparations for the establishment of the new radar stations. The primary responsibilities of Page were to make radio measurements (tropospheric scatter path loss tests), weather measurements, and precise geodetic location surveys. Page personnel were the first to ever set foot at most of the new stations. Construction of the permanent facilities began in 1959. The completed stations continued in operation for several decades thereafter.

Tropospheric scatter radio was a technique that involved bouncing an ultra-high frequency signal off the troposphere, using large parabolic antennas. Page employed me as a test technician for the project during the summer break from college.

I had previously worked on tropospheric scatter and ionospheric scatter systems in Labrador, Greenland and the Pacific area.

Greenland, and especially the interior sites on the ice cap, was considered a hardship area so that everyone assigned to the sites was required by contract to keep a diary. The Air Force thus hoped to gain a better insight into the difficulties of working in that environment. Diaries were turned in to Page at the conclusion of the project and were studied by Page and Air Force specialists, including psychologists.

My diary-- the only one I ever kept in my life-- was returned to me in early 1959 and lay in storage in my basement for 30 years until I re-discovered it during a recent move. It is presented in the following pages just as I wrote it, with the addition of photographs I took that summer and parenthetical explanations of most of the acronyms and technical terms.

Seven test sites were established, all on latitudes close to the Arctic Circle. One was on Baffin Island on the east coast of Canada, five were in Greenland, and one in Iceland. The Baffin Island site was code named Dye. Sites in Greenland were named Dye-1,

Dye-2, Dye-3 and Dye-4, from west to east. The two interior sites (Dye-2 and Dye-3) were situated on the ice cap while the other two Greenland sites were in the relatively fertile coastal strips. A fifth test site, Dye-5, was situated on the west coast of Iceland, and the field headquarters at the Sondrestrom fjord, Greenland Air Force Base was designated Dye-6. Dye 3 and Dye 5 were later moved, which made for a total of nine sites in all. I was assigned to Dye-4, which meant I could interact with the Eskimos who lived exclusively in the coastal areas. As it developed, my diary dealt more with the Eskimos than with the technical aspects of the assignment.

Page, Western Electric and the Air Force administered rigid physical examinations to everyone recruited for the project. Only personnel under the age of 40 were considered for Dye 2 and Dye 3, and all personnel were given the necessary immunizations and vaccinations, along with special arctic survival training. Somehow, I missed out on getting the training. But we were all issued arctic survival clothing, and several arctic experts were brought aboard to help with the planning and training. This included consultant Adm. D.B. MacMillan (Retired), whose career as an arctic explorer started when he went on the Perry Arctic Expedition in 1908-09. Later he was a member of the Cabot Labrador Expedition in 1910, and the leader of the Crocker Land Expedition in 1913. He made almost annual expeditions to the arctic between 1920 and 1941, when he was recalled to service.

Another advisor was J. Glenn Dyer, whose background included 44 trips to the arctic (one of four years' duration), and two trips to the Antarctic. He participated in Admiral Byrd's Third Antarctic Expedition. Then there was Michael Slauta, a specialist in planning logistic support for cold weather operations, and an instructor in the Army Arctic Indoctrination School. This team was rounded out by several Air Force arctic experts who actually accompanied the teams to Dye 2 and Dye 3 and stayed with them throughout the testing.

For the two months of our assignment, Dye 4 (my site) was given 5,200 pounds of food in military 5-in-1 rations, 2,000 pounds of fresh food, 5,600 gallons of petroleum products, and 50,200 pounds of equipment and subsistence items. We were also assigned a freshly graduated medical doctor equipped with the tools, drugs and medicines of his trade. Dye-2 and Dye-3 were furnished with Weasel tracked vehicles.

Sarasota, Florida August, 1995

Chapter 1

Getting There

My diary begins June 19, 1958, as Paul Wagner and I leave Washington D.C. to pick up our ship in Halifax. I have been lucky, being selected for Dye-4, which means I won't have to live on the barren, wind-blown ice cap, but instead will spend the summer on the extreme east coast of Greenland, where the ice and snow melt in the summer and there are actually wild flowers and other forms of vegetation. Paul is to be the Site Manager for Dye-4. Page has carefully estimated the provisions we will require for the

summer, down to the last roll of toilet paper, and has chartered a ship to get us there. The ship, the Motor Vessel Theron, is a sealing vessel that has been converted for the assignment by the removal of the forward mast and the addition of a small flight deck to handle the two helicopters which Page has chartered from Petroleum Helicopters, Inc. of New Orleans. The team for Dye-4 will consist of ten men: Paul, the site manager and engineer; Wayne Galusha and myself, technicians; Bob Smith, Joe Yeakle, and Paul Martin, riggers; Jack Allen, medical doctor; George Kourofis, cook; Warren Hilger, surveyor; and Newsom, an engineer from Western Electric (WE), the company who maintained and operated the then existing Dew-Line radar sites across northern Canada and who had brought Page into this project.. We will also carry a 10-man crew for Dye-1 on Greenland's west coast, who will be dropped off after us. The DYE-1 team is headed by Ken Moore, who will be the senior Page man aboard the Theron on the trip up to Greenland.

Thursday, June 19th

Paul Wagner and I left Washington at 12:20 this afternoon and arrived in Boston in the midst of a cold, drizzly rain. We had three hours before our TCA (Trans-Canada Airlines) flight left for Halifax, so we went into town to shop for a jersey to wear aboard the ship. We settled on pullovers with hoods and returned to the airport.

There was a message for Paul to call McGuire Air Force Base. We found a package containing important drawings, including the exact location of our site, had been put aboard an Eastern Airlines flight that was just arriving. Paul ran down to get it and just had time to make our flight.

Halifax was a larger town than I had expected. Yeakle, Smitty and Galusha met us at the airport with a Hertz car. We had already cleared customs at St. John's, New Brunswick, so we drove down to the ship for a look. Paul and I were both amazed at the smallness of it. It seemed tiny for a Potomac River run, much less a trip through ice-infested waters up the coast of Greenland.

No one was aboard her as they had stopped loading operations for the night. The boys told us the plan was to sail at 11 AM the next day. But for the night they had read of a dance scheduled at the "Jubilee Boat Club," and we all decided to attend. They dropped us by a hotel, the Belmont (we were extremely lucky to get a room, as there was a doctor's convention in town). We dropped off our bags and headed out for the dance.

After some 45 minutes of searching, we found the place-- a nice little club right on the water. We paid a dollar admission and entered to find some 30 to 40 attractive young girls standing about, perhaps an equal number of young men on the other side of the room, all apparently awaiting the next number.

We walked to the bar and ordered seven-up (no liquor was allowed) and surveyed the scene. We were all taken by the beauty and fine dress of the young ladies. The band began and ten to twenty of the local fellows asked the girls for a dance. I made an attempt at conversation with one or two of the girls in my immediate vicinity and, though

they were polite and smiling, they showed no inclination to further the conversation. I then danced with one and, though she too was very sweet, we really couldn't connect on the dance floor. By now two or three of our group were also dancing and I found an extremely friendly miss named Barbara who let me buy her a bottle of pop and take her to one of the tables along the sidelines. We held a pleasant conversation; she liked tennis and sailing; her Aunt had a schooner which required a crew of six, aboard which she spent a good bit of time. She was a steno at the telegraph company. Seemed very interested in me and what brought me to Halifax. We spent the rest of the evening together and she agreed to have dinner with me the next night if my ship did not leave as scheduled.

The dance closed at twelve and we Page men drove back, first stopping for a sandwich. We agreed that the girls were lovely, good company, and "genuine," though everyone complained of having trouble dancing with them. I said they just have their own style and seemed to dance well enough with their own boys and all agreed. Several of us hoped the ship would not leave for a day or two yet.

Friday, June 20th

Early breakfast and checked out of the hotel. We moved aboard the ship. Ken Moore had divided up the compartments by rank. I will sleep "before the mast" in a six-man cabin marked "sealers." The cabin is quite large and light and has a good- sized table. I thought to myself that I was probably the only one of the group coming aboard really "belonging" in a cabin aft by virtue of my Merchant Marine Radio Officer's Papers, which I carried. But of course Ken had to follow some procedure in assigning rooms, and since I had been given the title of "No. 2 Technician" I moved in with the assistant riggers.

The ship is still loading and will not receive the helicopters until tomorrow morning at best. After lunch, a meeting was presided over by Ken, whom most of the men dislike because of his militaristic procedures.

In the afternoon, Paul, Wayne Galusha (who is to be the other technician at Dye-4) and I toured Halifax in one of the four rented cars. I called Barbara to tell her I hadn't sailed and to confirm our dinner date, but she had been given the afternoon off from her job and had not yet returned home.

We drove up to the Citadel and took pictures looking down on the city and then drove down to the pretty gardens near the center of town. Tiring of sightseeing, we entered a little restaurant and spent the remainder of the afternoon drinking coffee-- or rather, studying the telephone directory. Barbara's mother had told me that Barbara normally didn't arrive home until about 5:30. Wayne and Paul suggested that when I call her back I try to get a blind date arranged with one of her girlfriends and either Paul or Wayne. With nothing but time on our hands, these two went all the way through the phone book trying to locate Barbara's number so as to find her address (I had forgotten her last name), but were unsuccessful. Finally 5:30 came and I made my call. Barbara did have a friend a very luscious-looking school teacher, about 23, and Paul won the coin flip.

After a fine dinner, including wine, at the handsome oak-paneled dining room of the Nova Scotian Hotel, we embarked on a guided tour of the finer points of Halifax, including the various universities and the attractive country club with its excellent yacht basin.

By 10 PM we had run out of places to see and, since none of us wanted to return home, I suggested the drive-in theatre. I had previously seen "Las Vegas Story" but it didn't really matter.

Saturday, June 21st

Plans were to get underway around 3 PM, but the 'copters had to be covered with tarps and a water-proofing agent sprayed on exposed parts; the doctors went to town to pick up the narcotics; and other last-minute items held us up until about 3:30, when the harbor pilot came aboard and, with the help of two tugs, we moved out into the channel. About 20 dock hands and a couple of women, wives of the ship's crew, were there to see us off. Out in the channel we dropped anchor and "swung the compass" after which a blown gasket in the engine had to be repaired. It was about 5:30 before we finally got underway.

Before we got beyond sight of land we ran into sizeable swells which sent the bow of the ship through an excursion of some 25 feet. Up in my assigned quarters my roommates were nervously joking about the motion of the ship. I was the only one of the six who could boast having been to sea before without being sick. After dark, a rain squall came up and the boys were getting a real introduction to sea life. But only two of the six in my cabin were sick-- and only mildly so. I later found that was the percentage throughout the passengers. Only one man, George Kerofoulis, our site cook, was sick repeatedly.

Sunday, June 22nd

Most hands are taking seasick remedies today, which make them drowsy. I was wide awake at 6 AM, something unusual for me, and feeling completely rested, went up on deck. The rain continued and waves were breaking over the bow.

Ken Moore said that certain hydrographic charts we need had not been available when we left, and that we might have to put into a Greenland village for them.

I feel I am beginning to get my sea legs now. After a good lunch, the slightly unsettled feeling in my stomach has gone and I feel there is little danger of my getting sick.

The mess boy told me this morning that he went up earlier this year aboard the "Arctic Sealer" on a sealing run and that this sea is smooth compared to what they had then. He said it took 94 hours to make the normal 48 hour run to St. Johns. I asked him how he liked sealing and he said it was all right, but that he had never worked so hard in his life.

The Captain was on the bridge around dusk and I went up to talk to him. Back in 1954

in Honolulu, I received my papers as radio officer, but had never had the opportunity of using them. I showed my license to Capt. Maro and he invited me into the radio shack to look around. He served double duty as ship's radio officer and transacted all business on the radio- telephone. There was also a Marconi 100-watt CW (continuous wave, used for sending morse code) rig, which stood idle. He said it blew the circuit breaker the last time anyone tried to use it but invited me to try my hand at it. After looking it and the instruction manual over, I fired up on 8 Mcs. (megacycles) and, though everything seemed to function smoothly, the output indicator lamp indicated no output. I called CQ (transmission meaning "calling any and all stations") a few times and got no response, tried other frequencies, likewise. Decided the trouble lay in the short antenna which had been substituted when the forward mast was removed to make room for the helicopters. The Captain showed me his loran, but he couldn't get a signal there either, probably for the same reason.

It was very pleasant up there in the chart room, which opened onto the radio shack and bridge. Subdued lighting, oak paneling, a receiver tuned to a distant station broadcasting Respighi's "Pines of Rome" all contributed to the romantic atmosphere I had always associated with the chart room on a ship at sea at night. The captain was Norwegian, as were all the officers, and quite congenial. At this time we were passing through the Cabot Strait-- radar was required because of fog which rolled in and limited visibility to less than a quarter of a mile. Occasionally a ship would be picked up on radar and if its position seemed a little too close, a warning blast would be sounded on the whistle.

Back in my cabin a poker game was just getting under way. I sat in for a few hands before turning in.

Monday, June 23rd

After breakfast, up to the radio shack again for another try at that transmitter. I had a great desire to work another station from a ship at sea and this was too good an opportunity to miss. After fooling around a bit on various frequencies, I shifted down to 500 Kcs., the international distress and calling frequency, and loaded up as best I could. Still no indication on the output meter (there was no test lamp available). Never-the-less, I gave a "CQ" and asked for a signal strength report. To my amazement, a British ship answered up immediately and said he read me loud and clear. I expected him to stop there, but instead he asked me for any information I might have on icebergs. This request came in that strange abbreviation peculiar to old-time wireless operators, and I was ashamed to have to ask him for a repeat. At that precise time, the receiver became extremely noisy, and I had a difficult time telling him that I had no news as yet. His last signal was "TKS CU" (thanks, see you), but I couldn't be sure. I said "CUL" (see you later) and when he didn't reply I assumed I had read him correctly. Anyway, I listened in attentively for some five minutes longer to make sure he was through with me. I realized that lack of practice through the years had made my ears much less able to distinguish code from static than was the case in my Coast Guard days. The mate stepped in to say that reception would be better shortly when they secured a noisy generator below. At any rate, I shut things down and went below. I later saw the skipper at lunch and told

him I had worked a British ship on 500 Kcs. and he seemed pleased.

At 3:30 PM there was an abandon ship drill. Everyone is assigned to the life boats except Paul, two others, myself and the third mate, who are assigned to a 10-man life raft. We were checked out on abandon ship procedures and then secured.

After dinner Ken passed around bottles of scotch, rye or beer to any who wanted them. I put a bottle of scotch in my locker, thinking I might want a drink or two later. Anyway, it was free, so how could I refuse.

But the seas picked up again after passing through the strait of Belle Isle and I, for one, had no stomach for liquor. I took my first anti-seasick pill before dinner and soon felt fine, but saw no reason to press my luck.

Tuesday, June 24th

Seas continued rather rough all day today. Up on the flying bridge to observe the tilt meter, the rolls were running around 18° and I saw one that was about 21° to 22°. I went into the radio shack again to listen in on 500, but the Marconi receiver is so poor that I could hear nothing. The only other receiver, a British made home-type receiver, is virtually useless as a communications receiver, so I gave the whole thing up as a bad job.

Wednesday, June 25th

Experienced great difficulty in sleeping last night due to violent pitching of ship. Two of the men, Jim _____ and Paul Martin, gave up trying to sleep in the forward cabin and slept on a padded bench in the smoking room aft. They said it was fairly comfortable.

The mate says we should sight Cape Farewell, Greenland, tomorrow morning and, if the ice isn't too bad, we should reach our site (Angmagssalik) Saturday afternoon.

Wagner, Warren (the surveyor), one of the helicopter pilots and a few others of us broke out the charts of our site and discussed ways and means of laying out the site. It will be tough because of the rough terrain. Everyone decided nothing more could be done until we can have a look at the site.

Thursday, June 26th

Raised the southern tip of Greenland about nine o'clock this morning. From a distance of about 25 miles the rugged mountainous coast seemed to have a white beach, but as we drew nearer the beach turned out to be a vast sea of floating ice. I was amazed at how sharply defined the ice field was. We had encountered a few ice bergs the previous couple of days, but once we passed the cape we found ourselves in a solid field of ice pieces ranging from a cubic foot up to mountains of green and white ten times the size of our ship. The captain decreased speed and gingerly the helmsman picked his way between the larger pieces. All the Page crew crowded on deck to take pictures and make jokes. The cook said he could see polar bears doing a dance on one large berg.

Another hour and we were through the worst of it and the captain increased speed up to the normal 11 knots cruising speed. The coast of Greenland now lay some 20 miles off our port, shrouded in wispy cumulus clouds. The temperature was around 40° and the sun shone brilliantly for the first time since leaving Halifax.

But soon we entered another area of pack ice and were forced to decrease speed again. After lunch, the Captain came down from the bridge and said it looks pretty bad. We'll go on a bit more and if it doesn't get better, we'll have to go back. This means we would go back around the Cape and up the west coast to Dye-1 and drop off the other crew first. The West Coast is free of ice.

Called to the bridge about 4:30 PM. Ice conditions had worsened and the captain wanted information from Angmassalik before deciding his course of action. He could not reach them on radio-telephone and asked if I could raise them on CW. I tuned up and called them and another station on the East Coast. Finally OZN answered and we shifted down to a working frequency with considerable difficulty experienced in tuning the transmitter that low. He rogered for a message from us to Page in Washington and the ship's owners in Halifax concerning ice conditions. OZN said they would get a full report on ice conditions up the coast from Angmassalik and we set up a schedule for 0710 tomorrow morning.

After dinner we passed an Icelandic fishing trawler heading south down the coast. I was on the bridge at the time. The mate declined trying to communicate with them, since they probably could speak only Icelandic.

About 2000 the steering motor went bad and two hours were spent adrift in slight swells relatively free from ice, while the motor was repaired. Then we headed out to open seas, the skipper planning to skirt the ice and come in on the coast further up.

Friday, June 27th

One of the seamen roused me at 6:30 and I went up to the radio shack for my schedule with OZN. OZN radioed the following information: "About 10 ice bergs and open polar ice in a belt of over 10 nautical miles in breadth and beginning about 8 nautical miles out of the coast."

Except for the abbreviation "NM" for "nautical miles" (which even the mate didn't know), I had no trouble with copying it and felt I am improving as a radio operator. However, the receiver is still extremely poor and the short antenna will cause the transmitter to trip its circuit breaker at the slightest provocation.

Towards evening we sighted a large school of porpoises and several whales blowing about a half mile off. It was another warm, sunny day and most of us spent the day on deck sunning, enjoying the 70° temperature and blue and white mountainous coastline.

Chapter 2

Moving In

Saturday, June 28th

Awakened at 6 AM by a thunderous crunching of ice against metal hull we were heading into the harbor of Angmagssalik. The scenery was even more magnificent in close. The ice which had been reported ten miles out to sea had moved in closer and was just off shore. Shortly after breakfast we cleared the ice pack, but not before passing an Eskimo fishing from a large ice floe. He was dressed in knee boots, a white parka, sun glasses, and smoking a pipe. As we drew nearer, he stood watching us placidly as our ship rammed into the ice floe next to his. For a minute I thought our skipper didn't see him and was going to run him down, but at the last instant the engines slowed and we pulled alongside him, everyone photographing like mad. The skipper yelled to him, asking if he spoke Norwegian or Danish, but the Eskimo only shook his head slowly. He offered us a halfhearted, or rather self-conscious, wave which was self-consciously returned from the 20-odd men lining the rail, and as we left him astern he jumped into his kayak, which he had drawn up on the ice, and made for shore.

As we drew near the village two more Eskimos in kayaks came out to meet us. These kayaks sit just out of the water, and the operator is not visible below the waist. In front of him, in a kind of harness, is his rifle and sitting above it what looks to be a windshield made of white fabric, which he uses to hide behind as he slips up on seals, crawling on his belly across the ice.

Next, the Danish officials came out in a motor launch and, behind them, various rowboats containing more curious Eskimos. We dropped the hook and moved one of the helicopters into position, unfolded the blades and got it ready for flight. It took off and looked for a suitable landing area.

Soon the second 'copter followed it, and landed in a large field near the town. Several of us (Wagner & myself included) paid an Eskimo a pack of cigarettes to row us ashore. Most of the PCE (Page Communications Engineers) and helicopter people spent the afternoon looking around the village. There were many Danes who spoke English. I was interested in buying a bearskin rug and, through an interpreter, found a Dane who was leaving the next week who had spent part of last winter in the interior where he had bought a large fur from an Eskimo for 300 krone (about \$42). He was willing to sell it to me for \$45, two bottles of whiskey and three cartons of cigarettes. It was the largest bearskin I had ever seen-- at least 10 feet long and about as wide-- but I had to hesitate, as I had loaned several of the guys money and had only about \$40 left and was not too ready to part with all of my purchasing power the first day. He said there was a ship due in and he was leaving for Denmark on her early next week, and so I had to decide soon. We agreed to meet at his house later on in the evening.

We walked up to a screened-in hut where two Eskimo women were carving seals into steaks and hanging them up to dry, their hands and dresses soaked in blood. Husky dogs ran everywhere-- friendly, but rather dirty. Near the hospital an attractive Danish

woman passed us (a nurse) and I tried to make conversation, but she couldn't speak English. About that time, one of the riggers, Gustafson, came up and, as he could speak a bit of Swedish, we had a pleasant talk. Another woman joined us who spoke fairly good English, Kirsten Petersen by name. She worked with orphan and poor children at the newly built sanitarium. She invited Wayne, Paul and me up for a look at the place. It was beautifully clean and bright all pink and blue and yellow and some 30 bright-eyed children were inside, preparing for dinner. Kirsten gladly arranged them in front of a big sunny picture-window so we could photograph them then decided they looked too unnatural and went to a closet where she got them dolls and toys to hold. Then we all walked down to an area back of the school where several of the children had built tiny one-room "houses," similar (Kirsten told us) to the way they lived out in "the district." They were decorated with the oddest assortment of knickknacks imaginable: A WWII pilot's picture, can labels, hand crayoned pictures, a vase of wild flowers, and the like. We returned to the building and inspected the immaculately clean sleeping quarters, four beds to a room and quite comfortable looking. The freezer was downstairs, where hung about 20 seals, a supply of fish and birds. They were equipped with a modern laundry, kitchen, tile baths and all the conveniences. But the nicest part was when Kirsten ushered us into her "sitting room" for tea. It was tastefully furnished and boasted a good deal of Greenland artwork, sculpture and pictures. There was a large bookshelf with English and Danish classics, and a short-wave receiver.

Kirsten told us much about the life in Greenland. She had been there two years, after a stay in Scotland. She said there was a better chance of buying native handicraft and skins on Kulusuk (where we were to establish our site) than in town.

Jack Allen, The Doc, made friends with the hospital staff and was considering staying at the hospital for the summer to help out, as the one doctor was shorthanded, and he had a launch which could bring the Doc to our site in a hurry if need be.

At night there was a dance and we received an invitation written in Danish. Several of the fellows went and reported there were a crowd of Eskimo girls they danced with them to ten records (polka, waltz and jazz), which were replayed all evening. Of course, there could be no conversation and the boys came home early. The Danish girls at the hospital had to work and could not attend.

The people look robust and healthy. Doc said the dogs get bad in the summer. They have nothing to do, get restless, are fed only twice a week. If a child falls down they will jump on it. Yesterday a little boy was badly torn about the face by a dog when he fell.

Sunday, June 29th

I didn't have to make a decision on the bearskin after all, as we decided to weigh anchor and move in close to Kulusuk for the unloading operation. My responsibility was to check the material off the manifest as it left the ship. We made up sling loads averaging about 2,000 pounds and the chopper could make a round trip to the site, unload and be back in about eight minutes. It was a rush to get loads ready on time and many times we would radio the chopper to circle the ship once before coming in for the load.

Nineteen trips were made, moving about 14 tons before we closed down for the day at 11 PM, sun still shining brightly. Eskimos were about the ship all day in their kayaks. One fellow dressed in an oil skin deliberately upset his kayak several times, turning a complete circle through the water and righting himself again. Many of the Eskimos came aboard, bringing their women and children. We passed out candy and cigarettes. The men smoke incessantly, pipe or cigarettes. The sound of rifle fire resounded all day through the countryside-hunting. One boatload of Eskimos near our ship amused themselves for hours taking pot-shots at floating ice. I wondered how they could afford to waste the ammunition. Perhaps it was a subtle warning to us that they weren't defenseless if we tried to "take over." But if this was so, their marksmanship was certainly poor. One of the ship's crew drew a gallery of attention from them when he produced a rifle and proved to be an excellent shot. Eskimos, generally, are notoriously poor shots.

Four of our men stayed overnight at the site. We were in radio contact with them. They had scotch and cold beans for supper.

Monday, June 30th

Rain today, meaning the choppers are grounded except for four or five flights. I made a trip up in the morning to help tie things down when we received a report of 50 mile-per-hour winds forthcoming. They never materialized. It was decided to keep everybody aboard ship for the storm. A bull session developed in my cabin during the afternoon. Nobody is pleased with the way things are going and all feel they can do better. While Paul was criticized a few days ago for being too wishy-washy and not accepting command, today he is criticized for not accepting suggestions. Later we brought several tons of gear out of the hold and sat it on deck, ready to go when the choppers can fly. After supper eight men, together with shovels and other tools, were taken up as close to the site as possible (the site itself was in a cloud bank) and they will work this evening putting up the first Jamesway (a wood-braced canvas structure).

Ron Rule reported a suit, bought just before he left the states, was stolen. The Eskimos are eager for clothing and willing to trade for it, but this was the first we'd heard that they would steal. The captain told the Danish Governor at Angmagssalik and now we keep our cabins locked.

Jack came aboard today from the Danish motor cruiser after spending the last 24 hours as guest of the Danish doctor. He says there is a high incidence of gonorrhea and tuberculosis among the natives. The doctor goes about in the boat during the summer to treat them.

Tuesday, July 1st

More rain, all day long. And worse, a fog right down to the ship. Helicopters were grounded all day. Around 5 PM there was a slight abatement in the fog of which we took advantage and made about four flights to the site carrying items which were badly needed. Eight men are now at the site, living in the one Jamesway erected. Heavy rains

prevent erection of another as the rain is harmful to the interior wood and canvas.

Wednesday, July 2nd

Awakened at 5 AM. Fog had moved out enough to permit flying to be resumed, though rain continued. We moved six tons before breakfast at 7 AM. I am convinced that the ship could have been off-loaded in less than two days had good weather prevailed. All the men are eager to work and no one avoids even the hardest tasks.

There has been a certain amount of inefficiency due to uncertainty as to who is giving orders. With Wagner and Smith ashore, and the Dye-4 riggers in the hold, Ken Moore is the senior Page man on deck. But unloading is not his show and he works with the crew-- not giving orders unless asked to. Since I am walking about with a clipboard and occasionally on the radio on the bridge talking to the 'copter and the site, I usually know as much or more about what is going on as anyone. But I would be out of place giving orders to riggers, so the operation goes along by ear. As an example, the men will be making up a sling load of electronic equipment and the helicopter will be making its approach. The load is a bit light and one of the 'copter pilots helping with loading will say, "Throw that box on there," and a box of building materials will be thrown on so as to bring the load up to 2,000 pounds. This causes extra work at the receiving end, as the box will have to be moved, but I have not the authority to do anything about it and there is already so much tension in the chain of command that I keep quiet.

Things went so well during the morning that there was a possibility of finishing up the off-loading during the day; accordingly I packed my things and prepared to move out on one of the afternoon flights. Four of the men, including Paul, came back on the last flight before lunch for dry clothes and a hot meal. After lunch, weather was socked in again and operations were once more suspended.

About 1:00 PM people began congregating in my cabin and I learned that Sam Newsom, the Western Electric man attached to our site, had called a meeting. The room was soon crowded with all the PCE men and one of the 'copter pilots. Sam had notes, and began by saying that we seemed to be losing sight of our primary purpose, i.e., to measure path losses to Dye-3 and Dye-5. He stated that unloading was secondary. Things should have been handled differently. There should have been established a definite schedule and the Jamesways should have been erected first off; that things were sitting out in the rain up there because of short-sightedness; the entire operation was fouled up pitifully; there was a complete lack of leadership and that he intended to reflect same in his report. He went so far as to state he hoped never again to be involved in an operation with Page.

Ken and Paul both undertook to refute him, item by item. They both agreed to mistakes but maintained that things weren't nearly so bad as Sam made out. Sam said a week had been wasted but was reminded we had only arrived here four days ago, two days of which had been completely unflyable; that loads could have been flown up in better order had the ship not been crowded with stuff for Dye-1 and everything loaded aboard as received from the trucks in Halifax. He was reminded that we were in a great hurry to

get unloaded so that the ship could get back to the West Coast and unload Dye-1. But Sam replied time was secondary; that we should sit here for 2 weeks if need be until good weather should allow a more orderly operation. On this, I believe him to be sorely mistaken, as Dye-2 will be evacuated around 1 September and Dye-1 must hurry to complete tests by that time, and of course Dye-1 is completely dependent on the speed we make in unloading. A radiogram from the office yesterday complained of our being three days behind schedule.

It also develops that our charts were in error as to the height of a certain mountain which will screen the path to the alternate site, Dye-5B. This was reported to the office Sunday immediately on the discovery, but the return message made no mention of it. Sam believes the problem serious enough that the site should be moved, but declines to take the responsibility of moving it. Paul said the decision to build here was his to make and he is standing by it. The argument degenerated practically to name calling; I was shocked to hear Sam tell Paul to his face that, though he is an excellent technician, he is unfit for command of such an operation, lacking the experience and this in front of all our people. Paul remained calm and attempted to defend his actions categorically, and it was decided, finally, to narrow the meeting to those primarily concerned. A new message was later sent to PCE and Western emphasizing the obstacle in the Dye-5 path.

Later, at dinner, Paul and Sam appeared on the friendliest of terms. I haven't yet had an opportunity of talking to Paul to see what has developed.

As an interesting sidelight, during the big discussion in my cabin, Sam asked all present what they thought of the operation thus far. Jack Allen ("Doc"), professing to know nothing of such things from experience, stated that it seemed confused and mishandled to him, but that he really didn't know for sure. Bruce, the 'copter pilot, on the other hand stated that he had participated in numerous mass movements while in the service, and that he had been quite surprised at the dispatch with which the thing had been carried off, through every adverse condition imaginable. All others remained silent, even though specifically asked for opinions this though most had been griping off and on for days. I believe the griping was prompted more by the miserable weather than by anything else.

Paul did make a mistake in not forcefully delegating authority; but the mistake was not as serious as made out to be and I believe Sam made a more serious mistake in not having out his differences in private conference. His reason that a previous conference failed to produce results seems unsatisfactory.

The Eskimos come aboard ship now from their kayaks all day long, bringing little trinkets to sell. They are exceedingly good bargainers and ask a good enough price for their wares. The ship's crew members have Eskimo women in their cabins from time to time, though they take a hard razzing about it. The Eskimos are anything but clean and smell of seals.

Thursday, July 3rd

Up at 4 AM today getting a couple of loads in before weather obscured the site again about 7 AM. Winds up there reached 60 mph. At 10 AM the helicopter people decided to fly over to Angmagssalik to rev up the other helicopter and I bummed a ride over to see if I could still pick up that bearskin.

Walking to town from the landing area, one of the first persons I saw was Nielsen, who had previously acted as interpreter in my negotiations with Lief, the Dane who wanted to sell the skin. Nielsen told me it was still for sale and a few minutes later Lief drove by in one of the three trucks in the town. We closed the deal and, as Lief had to leave, Nielsen helped me carry the skin down to the 'copter-- he also gave me the skull.

Both Nielsen and Lief were leaving on the Norwegian ship, then unloading, in the morning. These men work four years and get a year's leave with pay back in Denmark. They don't make more money than at home, but it is tax-free. Nielsen showed me around town a bit more and we went down to the post office, where Bruce, the pilot, and Hogan, the doctor for Dye-1, were buying stamps and posting letters for the boys. The Eskimos had just been paid and were buying money orders-- one woman bought one for 100 kroner, or about \$17. I couldn't guess where they mailed them to. I asked the Postmaster for stationery and he took me up to his supply room to look for some. We found some post cards which must have been stacked away for years. I bought a large quantity, and brought them back for the guys on the ship.

A rather good looking Danish woman came in while I was waiting and asked when I was leaving. I said shortly, and she wrote a brief letter to Capt. Maro which she asked me to deliver.

Back aboard ship, everyone was impressed with my bear skin. The steward, who bought one last week, said I got an extremely good buy. The skin cost me \$45, two bottles of scotch and a carton of cigarettes. It will cost me about \$80 to have it tanned and finished at Halifax and the finished product will have a New York value of from \$500 to \$1,000.

The Captain has been plagued with swift currents, heavy ice, and deep water, water too deep to properly anchor. The anchor line is always taut and vertical. Early this morning the anchor chain broke and we lost the anchor in about 70 fathoms. Fortunately, we carried a spare. But the Captain is anxious to get out of here-- his charts of this area are incomplete and even in error. The weather is unpredictable-- the ice is dangerous, big bergs move in on us and if the crew is not attentive, serious damage could result. So it was agreed to move over to the harbor at Angmagssalik in the morning and complete unloading from there. We had some more clear weather in the afternoon and finished unloading the P.O.L. (petroleum, oil and lubricants). There are just three loads left now and they are comprised of rations.

I rather believe this unloading operation could have been completed today easily enough, but that Ken and/or Paul are holding off awaiting a reply to the message sent out the day before yesterday reiterating the fact that the Dye-5B path is obstructed.

Friday, July 4th

Dense fog continued throughout the day, making any flight impossible. During the morning we saw two Eskimos kill a seal just a hundred yards off the ship. They fired one shot from a distance of a couple of hundred yards, which evidently hit the mark (and debunked my previous statement that Eskimos are poor shots). The two Eskimos then jumped in their kayaks and paddled out to the wounded seal. Amid great struggling and thrashing they repeatedly speared him and put a sort of balloon, probably made of intestine, under him so that he would float and towed him to shore.

The strong currents, deep water and ice having forced us to move the 18 miles to Angmagssalik, we got underway in the early morning but moved only six to eight miles all day. After dinner we pulled alongside a huge iceberg and the ship's crew dragged a hose out on the ice to a large basin of caught rain water and pumped about 20 tons of it aboard. The water aboard ship was getting a bit bad and everyone is now enjoying this fresh water. During the pumping operation Smitty, who is a bit crude to say the least, asked the Captain, "Hey Skipper, when are you going to get finished sucking off this iceberg?" The skipper only smiled and replied, "Pretty Soon."

This being the fourth of July, a little party was formed down in my cabin, which soon swelled to monstrous proportions. Everybody had enough to drink. Ken, the cook for Dye-1, is at his best when about two-thirds drunk. He has a million stories and a hearty booming laugh that can be heard all over the ship. Ken is about 5'9", 200 pounds, possibly 38 years old, of florid complexion, and is always dressed in an open-neck sport shirt-- even on deck and in the coldest weather. Dye four's cook, George, is about the same size and weight, and being Greek he has a dark complexion and a slight mustache. Just the sort of man you would expect to find running a fruit stand, which is exactly the profession he had for four years before coming on this jaunt. At one point during the evening, Ken turned to George and said, "Did you know that Kinsey says that eighty percent of all ...," (voice trails off). George says, "What did you say?" Ken, shouting, "I said eighty percent of all homosexuals are hard of hearing." Gus got out his guitar and we all sang until the whiskey ran out.

Saturday, July 5th

Fog even heavier this morning, though Angmagssalik radio says it is lifting there. We are just sitting about eight miles out of the harbor. We received a radiogram from Miller at the office telling us to go ahead as planned and that they were studying the Dye-5B obstruction problem. They also asked what we have yet to unload. It seems a bit silly to have to reply that we have been sitting out here for two days, awaiting an opportunity to unload just 120 boxes of rations and fly the remaining men up to the site. If that could be done right now, the ship could sail for Dye-1. I considered the possibility of taking it in by small boat, but it is many miles to the site from the beach, an impossible task.

The other morning an Eskimo woman came aboard, furious because her two daughters had stayed aboard the ship overnight. She went to the bridge and cussed out several rough-looking deckhands with a barrage of exclamations of which they could not

understand a word. The fact is that the two girls were completely innocent, having spent the night in the galley. These poor deckhands would have had a hard time making any mother believe that, much more so an Eskimo mother. The whole incident reminded Pat, the helicopter pilot, of the story about the princess who, when walking through the woods, found a frog who could talk. The frog said he was once a prince but was transformed by a wicked witch. The princess was eager to help, and the prince said that if she would take him home and put him under her pillow for the night, he would be saved and regain his former self. She agreed, and picking the frog up gingerly, took him home and put him under her pillow. The next morning, sure enough, there was a handsome prince. "And do you know," says Pat, "that to this day the princess' mother refuses to believe that wild tale?"

When we are near enough to land, the Eskimos like to row out and come aboard. They just stand around, mutely watching us work, even when it is raining. When a piece of a packing crate fell from a helicopter load, they raced to get it and given a pack of cigarettes and now it is difficult to throw anything over the side without some Eskimo returning it.

In unloading P.O.L. at the site, a drum of Kerosene was badly damaged and was given to an Eskimo. This gesture undoubtedly won the Eskimos to our cause and I don't believe we will be bothered with them stealing as around Angmagssalik. When George lost a carton of cigarettes a mile from the site, an Eskimo found them and returned them to him intact.

Chapter 3

On Our Own

Monday, July 7th

Completed unloading Sunday afternoon and moved ashore. Sunday and Monday spent digging in the third Jamesway, erecting tent and putting diesels into operation. High winds Monday night revealed newly erected Jamesway not pulled tight enough when one flap came loose during night.

Tuesday, July 8th

Paul and I spent the day wiring up power for the site. By 10 PM we threw the switch and for the first time had electric lights all over the site.

Wayne fell on some jagged rocks when he left the tent during the night in his stocking feet to go to the head. The next morning he was so sore from cuts and scratches that four of us carried him down to the cook tent in a stretcher, where the Doc spent all morning cleaning his wounds. He will be out of commission for a week, probably longer.

Wednesday, July 9 through Saturday, July 12th

This week spent in long hours of hard work by everyone. Scores of crates were opened, their contents checked, repaired where necessary, and put into operation. The REL transmitter was fired up by Wednesday, putting 120 watts into the dummy load.

Everyone but Paul and I gave Smitty a hand in digging foundations for the towers and I dug one morning. We were fortunate from the beginning that the Eskimos in the area are hard workers eager to work for lunch and supper. The best bartering material was cigarettes, but we traded them off so quickly that it looks as though we may have to buy ours from the Eskimos in the future. George picked a fine young boy named Antoine, who looks to be 14 but says he is 20, to help him in the kitchen. "Tony" quickly became a favorite with all the hands and George set up a bunk for him in the supply tent. Water must be hauled from a lake 1/4 mile downhill and, considering that we use about 50 gallons a day, it would be quite a burden on us to have to carry it. But Tony does this. George has taught him to wash and dry the dishes (he does a splendid job), wait tables, and the hundreds of little errands that require doing. George talks with his hands anyway, and Tony has little trouble understanding him.

Thursday a Coast Guard icebreaker moved into the bay a few miles from our mountain top. We wanted to radio her and invite some of the crew up, via their helicopter, for tea. But mindful of our order not to communicate with any outside station except in emergency, we decided against it. We did hang a red marker panel on the side of our hut, hoping someone would spot it from the bridge. I tested the VHF (very high frequency) transceiver a few times when their helicopter was up, but they either didn't hear me or weren't interested.

We had considerable difficulty with the diesels from the beginning. They vibrate excessively and we hoped they would settle down, but now it is beginning to look as if they might shake themselves to pieces. The fuel lines open slightly at the connections, admit air and the diesels shut themselves off. We have no sealing compound, nor anything we might use as a substitute. The vibration even caused the circuit breakers mounted on the front of the generator to open so that we had to bypass them and wire in screw-in type fuses and tape them in.

The weather is constantly changing. An average day will start out with brilliant sunshine about 2:30 AM, turn to cold and windy by 6 AM, dense fog from 11 until 3, sun breaks through an hour or two, and then low clouds move in to obscure the surrounding mountain peaks-- temperatures range from about 28° up to 70° F in one day's time.

By Thursday we had strung a makeshift antenna for our HF (high frequency) communications transmitter. We called the other sites all through the day, but heard nothing. We were particularly anxious to contact Dye-3 as we knew they had changed location and we had to have the new location prior to digging in the tropo antenna facing them. Just when we began to think our HF antenna was no good, things opened up and we began getting signals from everywhere. We got our first time check from WWV (NBS station that broadcasts time checks around the world) since leaving Halifax. The surveyor, Warren, needed desperately to make sun shots. Friday night I was again listening in on our assigned frequencies when I heard a faint warbling signal, barely audible through the static and QRM (interference), which seemed to be answering my call. The previous night Wayne had awakened me at 01:30, saying he had heard Dye-3 faintly and they had shifted to CW-- I was the only one of the crew that can work CW so

he called me out of bed, but we never re-established contact.

The station calling me Friday night identified himself as 9KV6. I was calling Dye-6, but luckily realized they had probably switched call signs since we left the states. I asked his location and he said, "Western Greenland." Then I asked if my new call sign was 9KY4, and when he said yes, I knew we were in business. We kept shifting frequencies, trying to find a clear channel, but when he could read me, I couldn't read him and vice-versa. Finally, it cleared up and about 2 AM we switched to voice and Wayne took over so Paul and I could go to bed. Wayne had recovered amazingly fast and was now standing 12 to 6 AM watches. During the night he learned that Dye-5 had not been heard from yet, that Dye-3 had gone in and set up but then were flown out again to await a new QTH (location), Dye-1, the boys we left on the ship, were said to be "loading at BW-8" ("Bluie West Eight," a code name assigned by the British during WWII to Sondrestromfjord, Greenland and still used to designate the U.S. Air force Base there).

We couldn't imagine what they could be loading, unless it was cigarettes. The next day we listened to Dye-2 and Dye-6 exchanging messages all day, mostly concerning food and medical supplies needed.

Paul got the bugs out of the NBS transmitter and fired it up Saturday-- he had to relocate the airflow interlock switch in the final amplifier and was a bit apprehensive of the NBS boy's opinion on this move, saying they are very funny about things like that. But the transmitter definitely would not work as it was and there was nothing else to do. We receive Radio Moscow very clearly and enjoy the newscasts. Yesterday they advertised an "intellectual discussion" entitled "Who Started the Cold War," but we missed it.

We have worked about 14 hours a day this week, but I still found enough time to learn a little Eskimo from Tony and others. Tony still does not speak a word of English, though he seems to understand pretty well. I have compiled a small dictionary of about 100 words which I carry with me. Tony, to my surprise, writes a very nice hand, resembling German script.

A young girl named Karena is the sweetheart of the camp. She is about 12 years old, with long soft hair that is copper in color, beautiful large eyes, perfect teeth, pink cheeks and a smile so engaging that she would be judged beautiful in any country. There are usually 10 or 11 Eskimos hanging around the cook tent at meal time, waiting for leftovers-- and Karena's father is often among them. He is a shrewd trader and we all knew him by name before we spotted Karena. Tonight George invited her in and let her eat with Tony at the serving table. She and Tony are much alike in manner, demure and shy but with a ready smile. They are about the same size and could be the same age, but that Tony maintains he is 20. We kidded George, asking if he was playing the Matchmaker, bringing the two of them together for dinner. Joe was going to go up to the sleeping tent for a candle for them, but decided the climb was too much.

After dinner, while George and Tony did the dishes, Karena sat at the side of the table while we smoked and drank coffee. She sat there, hands folded in her lap, and watched us with interest, laughing every time we laughed. She could tell when the conversation was about her for then she would look down at her lap, or smile if we did. When Tony finished his work, Joe sat him beside her on the same chair and George tried to tell them they should get married. Jack said he would like to adopt Karena if he could afford it.

Now a crowd of Eskimos pressed at the back door, asking for our baseball, bat and gloves. They liked to play every evening on the rugged hillside in back of the cook tent. They played according to very strange rules, but with great enthusiasm and energy. We stood on the sidelines and rooted for our favorites-- men, women or children. Two of the boys, about 12 years old, were always laughing and full of energy, and were constantly peeking in our windows. One of them we named Knucklehead. Then there was Amos, who seemed to be a sort of labor leader among them, and who spoke a fair amount of English and carried pictures and the address of a Dane and his wife, and Tobias, who helped in the tower erection-- a giant of a man-- biggest Eskimo we ever saw-- and his pretty wife. Then there was Papa-san, who was a husky 50, and who liked to bat but always struck out.

The Doc looked after them as best he could, attend to their superficial troubles. But the heartbreaking fact that a large percentage of them have active tuberculosis is more than he can cope with.

Sunday, July 13th

Smitty and his crew now have the large dish antenna half hung on the tower and it is a very impressive array. We start standing regular watches now eight hours on and sixteen off. I took the midnight to 8 AM watch for the first three nights. We set up the weather equipment and now will begin sending in daily weather observations;

I talked with Bob Carpenter at Dye-5 during the night. They are ready to go, even though a hoisting mast broke and dropped their large dish. Frank Butts was on watch at Dye-6 and we shifted to a clear channel to practice our CW for almost an hour.

Monday, July 14th

I slept all day today, having stood the mid-watch. That is I tried to sleep. The mosquitos are pretty bad during the day in any place that is protected from the wind and their frequent buzzing woke me throughout the day, so that by dinnertime I felt badly in need of rest.

During the day the riggers had completed construction of the tower and large dish. All that is left to do before beginning the transmission to Iceland is to run the coaxial line and mount the feed horn.

On watch again, heard that 9KY3 is back on the cap, setting up housekeeping after having to move some 60 miles. It seems that their astronomer (the two icecap sites had

astronomers instead of surveyors, the positioning of the sites being so difficult because of the lack of landmarks and the magnetic effects on compasses in the area that it was necessary to fix position by very difficult sun shots) had finally announced the site was some 60 miles out of position. The plan had been that the Air Force was to have set them down on the icecap within a five mile circle of the desired location, and the astronomer was then to locate them to within one hundred feet. The astronomer couldn't believe the Air Force navigator made such a huge error and he took star shots and ran his calculations over and over for weeks before making his announcement.

Also, our friends, the Dye-1 boys, are setting up and we were able to talk to them and to the Theron, standing by on the West Coast unloading. They said they had beer, cigarettes and fresh food for us, as well as mail. Joe Forno sent a message, saying it appeared we are in the wrong location and that the Theron would be here as soon as possible to relocate us. Paul sent back a message in which he firmly restated his conviction that we are located correctly. He and I talked about his reply before it was sent out, and both of us agreed it was best to be resolute at this state-- a wishy-washy reply at this time would make things only worse, even if we are wrong-- which is out of the question.

Tuesday, July 15th

Another day of trying to sleep, and another mid-watch. In the late afternoon I gave Paul a hand on the transmitter and we began pumping out 100 watts at 1000 MH to Iceland. Communications with Iceland via HF were poor, but we did learn that they were not receiving our tropo signal. A bit later, Bill Miller called from BW-8. He had just flown in and he talked with Paul for some time. He was convinced we would have to move and gave us information on markers we would find at the correct location. He said Capt. Maro would be briefed on just where we were to move.

The big transmitter ran all night without mishap, except that the VSWR (voltage standing wave ratio) is 1.6:1.

Wednesday, July 16th

On duty briefly during the early evening, my last midwatch being completed for a while. Paul again talked with Bill Miller and this time, armed with facts and figures recorded today, convinced Bill that we are in the correct location. It seems a message, sent by Ken Moore from the Theron the first day we arrived, misrepresented the distance and angle subtended by the screening mountain. Paul's new distance figure set him right and Bill says that this mountain had been considered and that it is actually one degree removed from our great circle path and thus, it is believed, it will not interfere with transmission to Dye-5B.

Paul must have been greatly relieved, but if so he didn't show it. I have never seen anyone so unemotional under pressure.

We have a broken thermometer in the transmitter crystal oven, and no spare. Our only air flow interlock switch broke, with no spares. Paul's repair job is holding up fine. Bob

DeSantis called from Dye-5. The NBS (National Bureau of Standards) man left until midnight and they requested we take our transmitter down until that time.

While writing these words, Jim Merrell called and we discussed the possibility of making it back in time for school. He said he had written my mother for me to tell her I was OK. We broke the conversation off after a while, as the Theron was expecting the helicopter back from BW-8 and we didn't want to tie up the frequency.

A little while ago, when nothing was doing on the air, we called 9KY2 and asked them "how they read us." When they asked for a long count (to test the circuit), we put Knucklehead on the circuit and he counted to 20 in Eskimo while a pair of girls tittered in the background. Dye-2 asked what was going on and when we told him we kept an Eskimo here to do our counting, he said, "Roger. Dye-2 out." He wanted no part of it. Knucklehead came into the radio shack with his usual silly grin, put one hand over his chest, one in the air, swayed his hips and said, "Musik?" But when we tuned in a folk dance from BBC (British Broadcasting Co.), he reneged and refused to dance with one of the two gals who came in with him.

On leaving the States, the office impressed on me the need to travel light. All our needs were to be furnished. As a consequence, I took little more than the clothes I was wearing, which included a good, but light-weight, pair of Florsheims. To my dismay, I discovered the only footwear provided in the clothing issue is a pair of extremely heavy, water-proof arctic boots, each weighing about 7 lbs. The boots are so thick and well-insulated that after a few hours wear in mild climate, your feet are literally wet with perspiration. Their heavy weight makes it a real chore just to walk and climbing the steep slopes on which our camp is built is severe punishment. The soles are now almost completely gone from my street shoes and I have been seriously considering bartering with the Eskimos for some sort of native footwear. But the fact is that I have nothing left with which to trade. It would be hard to find an Eskimo willing to take a check on Riggs National in American funds.

I did make one trade that gave me great satisfaction. The Eskimos are always trying to sell us hand-sized carvings from soapstone. I spent an hour carving the figure of a bear from a large bar of ivory soap, and after examining it carefully, an Eskimo accepted it happily as full payment for one of his soapstone carvings.

Thursday, July 17th

We received a message which we were asked to pass to the Corps of Engineers located some seven miles from our site. We sent it down via Tobias and asked them to come up on one of our radio frequencies-- I first got permission from 9KY6 to do so. We had previously thought of communicating with one of the two ships in the channel via blinker, but it never got dark enough. Anyway, the C.G. (Coast Guard) Icebreaker "Eastwind" did come up on channel three and we had a chat. We both agreed to stand continuous guard on 121.5 MH., which we checked out. We invited the C.G. up for coffee when the weather broke. Later, 9KY6 told me I did not have authority to contact outside stations (they had overheard my conversation with the skipper of the Eastwind),

but I told them they themselves had previously OK'd my radio contact and they said, "Sorry."

Chapter 4

Visitors

Friday, July 18th

Today is a beautiful, clear, sunny day. The temperature, 56°, seems so warm that some of us have stripped to T-shirts. George announced he will serve iced tea for dinner. We took down our transmitter and found a defective part in the transmission line which, when corrected, brought the VSWR down to 1.15 to 1. At the same time, Smitty moved the dish up vertically six inches, Warren having determined the error. We then contacted 9KY5 and they said they were running a check on our signal. They said it had been very strong earlier. Mr. Petersen of NBS advised we should leave out a piece of rigid coax we had removed (suspecting it to be a mismatch), even though we had to run the PA (power amplifier) with the front door slightly open, spoiling the airflow. At their suggestion, we have been running 150 watts and the tube is rather hot, thus we are keeping close check. Running 200 watts briefly yesterday, heat caused power to fall off gradually and we decided to settle on 150 watts. D-6 reports they are reorienting their antenna also.

The Theron radioed for us to save empty diesel drums, as they will be needed for ballast on the return trip.

At noon, two helicopters from the Eastwind landed and the Captain stepped out for a brief talk. He said he was a bit leery of us he had not seen us arrive, didn't know we were here and indicated he thought we were Russians. This explained his prior reluctance to communicate with us. I talked to him earlier via radio and he asked if we were American and how many there were of us. He said he checked on us via Navy Radio when he couldn't find our call sign listed in any book. We asked him down the hill for coffee, but he could not take the time this trip. He explained his job was to prepare a landing beach for an LST that was due in tomorrow. He said the coast as so rocky that it was impossible to prepare a beach, and that the LST (landing ship-tank) would have to unload via small boats. Wayne asked how his beer supply was. He answered low, but that he thought the Danish ship, Kirista Dan, would have some extra Tuborg they might spare.

Tension seems to be mounting between Sam and Paul, with Wayne usually taking Sam's part in any disagreement and often inventing some of his own. The disagreements now are always on technical matters, on which Sam presents himself as an irrefutable authority. His ideas come in the form of "suggestions," which, if not accepted, cause him to stalk off like a hurt child. On the few questions which could be proved, Paul almost always turns out to be correct, but he doesn't follow up his victory. As an example, both Sam and Wayne overruled him on placing the transmitter blowers outside; saying moisture would get in the transmitter and short circuit it. He accepted this, though he was in complete disagreement, until the NBS man in Iceland insisted

they be moved outside. We placed them outside and put a tarp over them, anchoring the ends so as to allow plenty of air flow. In addition, I listened carefully to see that the motors did not slow down due to load when the tarp was placed over them. But later both Sam and Wayne complained, and Sam insisted we pull it back (the tarp).

Saturday, July 19th

Today we put up our permanent long-wire antenna, about 250' long and 50' off the ground. We got an excellent signal report from Sondrestrom. 9KY5 said we could reduce power on the test circuit to 100 watts. Bill Miller, the Project Manager, returned to the States, so all is well.

Sunday, July 20th

The Doc and I started out at 9:30 this morning to walk to the other side of the island, where the Corps of Engineers is building the first stage of the base that will soon spread over much of the island. It was a beautiful sunny day, with the temperature in the mid-50s. The walk over was almost all downhill and only about seven miles, but the terrain was so rough that we took a little over two hours for the trip. We had to walk across large expanses of snow, cross streams, and climb many steep hills, so that we were a little bit tired when we arrived. Some Danish workers looked rather surprised when they saw us walking out of the wilderness. One of them directed us to the Boss' tent and we entered. We were received very cordially by Mr. Sharp, in charge of the camp, and Mr. Wauff, head of the Eastern Division of the Corps of Engineers. We had a very pleasant talk, exchanged progress reports, so to speak, and gave them what information we could concerning the topography of the land, as they were planning to run a road to our site as soon as the grading equipment arrives. They have well over a hundred men on the job now and many more are due to arrive in a matter of days.

Mr. Sharp looked familiar. He is built like a professional wrestler, dressed in the conventional sports garb of the overseas construction engineer, about 50-- said he knew our Harry Braun from the Philippines. After inviting us down "any time"-- and asking me to stay around until after lunch to help the Danes get their communications transmitter working--he and Mr. Wauff excused themselves, as they had to rush out to the Danish ship to get their gear off before it sailed for Copenhagen.

We were introduced to Mr. Pedersen, in charge of the Danish Arctic Construction Company contingent at the base, who invited us to lunch. We dined in the supervisor's tent on steak, boiled potatoes, yellow beans, Tuborg beer, apricots and whipped cream and Danish coffee. The best meal we'd had since leaving the States. Mr. Pedersen spoke good English and was excellent company. I praised Copenhagen, his home town. We discussed Peter Freuchen, Americans, colleges, etc. He asked who our "team leader" was, and I said Paul Wagner. He smiled and said did he write ... and began humming a theme from Tanhauser. I said no, this Wagner didn't write Tanhauser, and he was delighted. Americans with at least some knowledge of the arts!

We said goodbye after lunch and promised we would try to get our helicopter down to bring him and Messrs. Sharp and Wauff up to our site when the Theron returns.

The boys had asked us to try to bring back a case of Tuborg, but we ruled that out, owing to the stiff climb we faced coming back. Mr. Sharp did say he would get us a few cases before the Krista Dan sailed and ask Capt. Schmidtman of the Eastwind to have one of his men fly it up for us.

Before leaving the camp we looked for the Danish Doctor, as Allen wanted to meet him, but he was out fishing. I also offered to assist in getting their transmitter working, but on learning that they hadn't even opened the shipping crate or erected an antenna, I said I would be back in a day or two with more time to work on it.

When we returned to our camp, one of the helicopters from the Eastwind was just landing. Two bright young-looking pilots got out, dressed in cold water survival suits and red football-type helmets, and introduced themselves all around. We showed them the camp and Paul took them down for coffee. They said they had heard us calling for days on the radio, but were afraid to answer, thinking us Russians.

Around 6 PM a middle-aged Dane in knickers and long socks, with a pack on his back, walked into our camp. I was just finishing my after dinner coffee and so invited him in for a cup. He introduced himself in English as the "Sheriff" of our District. Ben Johnson by name, he was empowered by the Danish Government to keep Eskimos away from the various installations on the island. Mr. Wauff had told me earlier in the day that their contract forbade the hiring of Eskimos for any work whatsoever. Further, he said, a Dane was posted to keep them away from the camp. This was the Dane. Johnson told us the reason for this regulation was to protect the Eskimos. If they hung around us all the time for food doles, they would quit hunting and maybe starve during the winter when we pulled out.

He could converse with them in their own language and so I was anxious to learn some from him. But though I learned a few phrases, he said the language was spoken only by 2,000 persons, that the West Coast Greenlanders could not understand those on the East Coast and vice versa; that the East Coast language was not written and is extremely difficult. This discouraged my linguistic endeavors, and I gave him the dictionary I had been working on.

Johnson says he has been in this area off and on for the past eleven years, and obviously knows every bit of it intimately. He said the wind often reaches 120 mph, even in the summer. His wife is coming up in a few days and they will spend the next two years here.

Some of the men were muttering about him behind his back, making uncomplimentary remarks, suggesting he might be a spy and saying we should run him off, etc. This was because they knew they were probably about to lose their cheap supply of native labor. Few could realize that to the Eskimos it might prove to be a life and death matter after we leave.

At night, when the Eastwind sent in a report to 9KY6, the report included the fact that the camp was visited today by Messrs. Tull and Allen of Page Engineers. A rare occurrence and they were probably covering themselves in case we turned out to be enemy agents.

Wednesday, July 23rd

Back on the midnight-to-8 AM shift again, and it is rather pleasant, except that the mosquitos make it hard to sleep during the day. There are countless meter readings to be made, logs kept, reports made up and transmitted, recorders to be calibrated, radio schedules kept, etc., etc. This, in addition to reading, makes the night pass very quickly. I have been able to read three excellent books this week; Crime and Punishment, The Innocent Ambassadors (by Wylie), and Don't Go Near the Water. My hope of studying differential equations well enough to pass a waiver examination in September is beginning to wane. I have been forced to skip from section to section as I came across problems I couldn't solve-- problems, in fact, on which the book seemed to contradict itself. No one, not even Ken Moore, has been able to help me. Still, I shall resume the struggle today.

Karena, Antoine, Tobias and his wife continue to visit our camp in spite of the warnings of "the sheriff" ("Matt Dillon," as the boys call him). Tobias and Tony are both extremely useful to us and Karena cheers us all with her presence. In the evenings after work most of the gang, including these four Eskimos, gathers in the living quarters to play cards, usually a game the Eskimos love called "Eine Trauve."

Smitty says that if Matt Dillon comes "sneaking around" again, he is going to set a trap for him. "Who ever heard," he says, "of a sheriff in knickers?"

The water sources nearby have dried up and now we have to walk a considerable distance down a steep slope to a brook made by melting snow. So water is scarce. On the mid-shift, I used one bucket to bathe, wash out some linen, and with what was left, to make a pot of coffee.

The Theron is due in a matter of hours, bringing some much-needed supplies. This afternoon Smitty finished construction of the 48-foot tower and dish beamed at Dye-3 and we are now transmitting a signal (120 watts) over that circuit. The tower makes an excellent lookout post and I am going up in a few minutes (4 AM) to try to sight the ship.

A French professor, Dr. Renault, is going to Dye-2 and later Dye-3 for several days to study the ice there. He is a glaciologist.

Jim Merrell is at Dye-3 now and we talk to one another throughout the day. He says his "bug" (speed key for Morse code) is broken, but when it is repaired, we will work some CW.

The report from Dye-5 on our signal level there indicates ducting, almost certainly. WE requires 2 weeks of unducted data (unenhanced by unusual propagation conditions),

and it now looks as if this may be impossible if we are to get out of here before September 1. Today they said they had 80 db of padding (device used to reduce signal level in receiver circuits; 3 db. reduces level to one-half, 6 db, to one-fourth, etc.) inserted.

Chapter 5

The Theron Returns

Thursday, July 24th

The Theron arrived around noon today and dropped anchor down in the harbor alongside the C.G. Cutter. Owen and Pat flew up in the helicopter, bringing a case of beer and a carton of cigarettes for each man (I don't smoke, but the cigarettes make excellent barter material) They tell us the word is that we will definitely leave here September 1, pick up the Dye-1 boys and return to Halifax. So I will be able to make school's opening date.

Owen said that the Dye-1 site, located at an altitude of 4,700 feet, is so rocky that the men had to work a couple of days to level three spots for the helicopter's wheels to touch down. He also said there is no Eskimos there-- the nearest ones live about 12 miles away.

There is fresh food aboard the ship for us, and tomorrow we are going to ride back to the ship for a shower. We also received insect repellent and spray, so that we all drank several beers at dinner time and had a good time to celebrate. Tony caught three huge haddock for us, and some trout, so we will have them for dinner tomorrow. The haddock weigh about 10 lbs. each, caught on a spoon and hook which Tony made out of scraps from around the radio shack. Now a lot of the boys plan to fish.

Smitty received a letter from a girlfriend in Madrid-- written in Spanish. He could not read it and waited until I was on the night watch and everyone had gone to bed before he brought it over for me to translate for him.

Paul has volunteered to go on permanent night shift-- Wayne decided he would like the 8 to 4 PM shift, so I got my choice, the 4 PM to midnight shift, and beginning tomorrow we will stand these shifts permanently. My shift will allow me to get a full night's sleep, as well as have the entire day off.

Saturday, July 26th

Today was a very enjoyable day. Between breakfast and lunch I sat out in the warm sun and read. After lunch Pat flew one of our helicopters up, with Col. Anderssen of the Army Corps of Engineers, aboard. Wayne and I returned with them to the Theron and then got a boat over to the Eastwind. Lt. Jack Nelson, a 'copter pilot stationed aboard the Eastwind, showed us around and helped us buy shoes from small stores. We also bought several items for the boys from ship's services. We talked to some of the ship's officers in the wardroom and then Chief Bob Cookson of the electronics gang showed

us the electronics setup aboard, giving us demonstrations of the radar, loran, etc.

I took a shower and then enjoyed a steak dinner aboard the Theron before returning by 'copter to the camp.

Col. Anderssen said he is trying to charter an amphibian plane from Iceland-- ships are too slow in this day and age, he says. No one but Icelandic Airways will land at the torn-up airstrip at Ikateq (20 miles away), but he says it should be in shape in a week or two. So if we are delayed here too long, possibly we can return by plane so as to make school on time.

The FEL (Federal Electric Laboratories) transmitter has been giving us trouble right along, Intermittent trouble, blown fuses-- troubles that correct themselves. We had believed the problem to be in the HV (high voltage) power supply, but it turned out to be a bad klystron (the main output tube).

Wednesday, July 30th

Today was Smitty's birthday and we decided to have a party. George procured a jar of salad dressing and made potato salad. We twisted #10 copper wire and made spears to roast hot dogs, and we set out that part of our rations which most resembled party fare. Tony was told to invite all the kids at Kulusuk.

But when the guests began to arrive, we were surprised to see nothing but adults, and lots of them. The crowd soon swelled to some fifty Eskimos, and aside from Knucklehead and Tony, the only kids present were the babies which the mothers carried on the papooses on their backs. When asked where the children were, one of them replied, "Parties are for old people."

Anyway, we made the best of the situation, though we had expected only about 18 kids. The food soon ran out and we moved to the top of the hill for horseshoes and a tug-of-war. Smitty was presented with eleven gifts-- little handmade knickknacks, and he was so touched that he said he would have gone without food for three days to receive them.

Thursday, July 31st

I spent the afternoon repairing the control circuit in one of the generators that burned due to excessive vibration. No. 2 generator is now 50 percent jury-rigged.

After dinner we showed our first movie obtained from the Eastwind, along with the projector, entitled "Joe Palooka." The Eskimos especially enjoyed it.

Later I contacted **Jim Merrell** on CW and we talked about 30 minutes. He has a letter from Mother saying she received my card, but not my letter, and she is confused with all the addresses I gave her. Jim is going to drop her a line for me. We set up a schedule to contact each other every night on one of the unused channels on CW at 2230Z ("zulu" time, or Greenwich Mean Time).

Jim said that Dye-2 and -3, the cap sites, are going to be evacuated in about two weeks and the non-college boys from those sites will relieve the college boys at the other sites-- which, if everything works out to schedule, will allow me to leave in about three weeks. This is a bit early-- 3 or 4 weeks early-- and at \$250 per week that is quite a bit of money. Anyway, Bill Miller will be in BW-8 tomorrow night so we will get accurate information then.

Friday, August 1st

Pat and Owen flew up today with another film and a box from Chiefs Cookson and Letts of the Eastwind, containing ice cream, hot sauce, French dressing, A-1 Sauce, and other assorted delicacies. There was a letter included to "the boys on Top of Old Smokey." They said they were sorry they couldn't make our party, and invited us to "Steak Day" every Thursday at noon. We sent them a bottle of Scotch and included a little note.

Dye-2 reported to Dye-6 that one of their men had become "nervous" and that he would be coming out on the next flight for a few days at Sondrestrom. I was surprised to hear it was Ralph Mizsener-- a very calm appearing, easy-going guy who had earlier spent 18 months at Thule. Later in the day, they changed their minds, saying that Dr. Fenger had fixed him up and he is now O.K.

Sunday, August 3rd

I heard yesterday from Bill Miller, who is now at BW-8. He will be here sometime next week. Just before noon today Pat flew in; passengers included Capt. Maro and Chief Mate Karl _____ of the Theron, Chiefs Cookson and Letts and Lt. Lutz of the Eastwind, and Mike, the 12-year-old son of the skipper of one of the C.G. buoy tenders. You can imagine our surprise to see a 12-year-old American boy get off the 'copter. It seems his father took him along without first getting permission from HQ and got into a little hot water. Anyway, Mike is having a ball and is in no hurry to return to Miami for school this fall.

The Eastwind sent us up another 1-1/2 gallons of ice cream and the news that they will be leaving the middle of next week.

The Theron was anchored in a little fjord last week, with lines running to shore on both sides, thus the need for a watch was eliminated. John Bruce got the idea of going ashore, hand over hand, on one of the lines. He took the precaution of putting a line about his waist in case he got tired and fell in. John weighs about 200 lbs. and half way down the line his weight pulled the ship in toward shore and he was slowly lowered into the freezing water. Everyone was laughing too hard to be of much help, but when he was finally fished out the only real harm done was a ruined camera.

Another mishap involved the LST, which arrived a few days ago from Norfolk. It struck a rock in the harbor and tore a seam loose and settled on the bottom in about 2 feet of water.

The Eastwind plans to pull alongside and use its 90,000 gallon-per-minute pumps (used to rock the ship loose when it is wedged in ice by shifting the ballast) to raise the LST and allow welders to repair the damage.

We learned that the other night, the night of our party, Matt Dillon was seen lying on his belly on a nearby ridge, watching the proceedings (and the comings and goings of the Eskimos) at our camp through a pair of glasses. But he never put in an appearance.

Tuesday, August 5th

Yesterday morning Paul and I hiked (or rather climbed) to the southern tip of the island and back. We went down to the water and found the beach was made up of millions of tiny stones. I picked up two pocketsful of pretty-colored ones to give to Mr. Singer back in the office. In the afternoon we were visited by Mr. Larson of DAC (Danish Army Construction), Capt. Hobbs and Mr. Tillesten of the Corps of Engineers and several American construction foremen. We arranged a radio- teleconference with Col. Wachendorf at Sondrestrom, but it ended up that I had to copy down most of the instructions from the Col. as no one on this end could read him through the static.

We received quite a bit of fresh meat and canned vegetables from the Corps and last night had a meal completely free from ration food.

Paul Wagner went down to the Eastwind to have a bad tooth looked at they had to pull it and so he spent the night aboard the Theron. I broke Paul Martin and Warren Hilger (assistant rigger and the surveyor) in on the watch and they volunteered to share Paul's mid-watch. They were both technicians in the Navy.

Jim Merrell said Bill Miller was at Dye-3 yesterday, but was not answering any questions. He did take the names of all the college boys. Earlier he told Owen, over the radio, to be thinking of the possibility of flying one of the 'copters over the ice cap to Dye-3 from here. None of the pilots are very fond of this idea, as it would be hazardous at best. They would have to have extra navigation equipment installed and/or have an AF plane accompany them. This last is impractical because of the great difference in speeds.

Mr. Tillesten is empowered to charter ships and aircraft as necessary and so I have high hopes of getting home commercial via Iceland Airways. Problem: What is to be done with my bearskin aboard the Theron?

Early this morning the Theron radioed that Paul is coming along OK and will return here today.

Chapter 6

Moving Dye-3 and Dye-5

Wednesday, August 6th

Another Danish ship arrived yesterday, the Thala Dan, carrying some mail for us which

we will get as soon as it clears the Post Office.

Several of the boys took a hike down to the beach this morning, George among them. I was going to cook lunch for those of us remaining here, but when I got to the kitchen I found Tony had things well under control. He cooked and served us lunch. He still doesn't speak a word of English and it's amusing to see the professional way he serves at table, as learned from George.

Paul is still aboard the Theron; they pulled another tooth this morning. Talked to him yesterday and he sounded fine-- asked us to send down a bottle of scotch for the doctor who worked on him.

The Coast Guard Helicopter flew up yesterday at lunch time and brought us two loaves of freshly baked raisin bread. Several of the boys were standing on the peak of the hill and the tiny helicopter was buzzing around them taking pictures. One of the boys produced an aerosol insect bomb and sprayed it at them.

It got a bit dark last night for the first time and a few stars, also Jupiter, were visible.

Bill Miller was talking to 9KY3 today and stated that their position was wrong; the original coordinates given them were in error by 23 minutes. Warren tells me that if the error is longitude it amounts to about 9 miles; if latitude, about 20 miles.

Paul returned today and went directly to bed. A man had to be flown out of Dye-1A on an emergency helicopter flight with a case of appendicitis. George brought Tony a new pair of shoes from the Eastwind, of which he is very proud.

The news of the move in store for them threw the boys at Dye-3 into an uproar, so Jim Merrell reported in our nightly conversation on CW. He said the cook wanted to quit. I thought this was so much hot air until I heard Bill Miller and Dave Coddington (the supervisor at Dye-3) discussing it on the air. This cook has a "nervous" condition and wants out on the next flight. Bill spoke of "talking it over again with him, showing him that it will hurt the other boys" and, finally, telling Dave to threaten disciplinary action if he does leave. Dave defended the cook, saying he is very conscientious, but "nerves are nerves." Bill will fly in tomorrow and talk to him. Bill says the camp would have to close down and the tests forfeited if he quits, as it would be impossible to hire a replacement and get him there in time. This sounds extremely silly to me, as certainly someone could cook for the few weeks remaining. They could swap around, and live on rations for the remainder of the test.

Wayne has a buddy at Dye-5 who relays mail for him over the radio. This would be fine for an occasional letter, but he is carrying it to an extreme. Instead of limiting his answers to short assurances that he is well and still loves his wife, his letters are pages long, rambling over such things as sinus conditions among the men here, and including the most intimate terms of endearment; this read over the radio for all to hear, and forcing his friend to write out in long hand. He will even trade letters when the circuit is

bad, necessitating numerous repeats. Once he even had two letters re-read the next day! A man should expect to forgo such things when he takes a job of this sort.

Friday, August 8th

Paul and I have been working on the generators. Paul came up with the extremely simple but excellent idea of moving the regulator control circuit from the generator itself and mounting it on a nearby post by splicing the wiring. With the vibration eliminated, the voltage output is practically smooth and the power output trace on the recorder shrank to 1/5 its former width. We decided to do the same operation on all three generators.

Coddington sent a message to Miller today listing nine good reasons why the site shouldn't be moved. The best one being, in my estimation, that the gain realized would only be 1 to 2 dbm (decibels per milliwatt, a measurement of Power). Miller later talked to Owen about the problems attendant to flying the helicopters in. The weasel cannot be used for the move, and a 23-mile hop is said to be too short to make using a C-47 practical. Owen says the Theron will have to take the 'copters down the coast until they are within 110 miles of the site and an Air Force radar equipped plane will mother them in. Once there, they will be able to lift only 1,000 lbs. because of the altitude. (A C-47 was ultimately used to make the move.)

Saturday, August 9th

There was much activity today and yesterday. Many long radio conferences, Owen and Capt. Maro up here last night, Col. Andersson, Miller and Col. Wachendorf on the other end. The Corps needs the helicopters here and pressured Bill into leaving them here, accomplishing the move by AF planes. Coddington and Miller in long conversation, Coddington asking for more money for his men, saying additional men brought in to help in move would overtax kitchen facilities, etc., etc. Miller rebuking each point, and in a patient manner.

A huge LCR (Landing Craft, Repair) entered the harbor the night before last; I made radio contact with them and Mr. Biddle, the communications officer, invited me aboard. Paul and I had to go down yesterday to put up an antenna and install the transceiver for the Danes and so we took the opportunity to go over to the LCR, the Lindenwald, where Mr. Biddle showed us around and introduced us to the radio people. We then went into the wardroom for coffee, saw a bit of Anita our boys from the ship's store, including color film. The back part of this ship can be flooded and rather large landing craft can be taken aboard, the water pumped out and a floating dry dock results.

I rode down in the co-pilot's seat of the helicopter. I have been in the cockpits of many aircraft during flight, but have never had the sensation experienced during take-off in the helicopter as you swing out over the edge of a cliff.

The helicopter has been experiencing VHF difficulty and Paul and I set about to repair it. The trouble seems to be that the transmitter is getting insufficient drive from the modulator but the specific trouble is hard to locate-- probably in the wiring. We still have

to return to finish the job.

Paul eliminated some of the hum on the Theron's phone transmitter by replacing a rectifier tube we will finish the job when we can get back by placing capacitors across an inverter aboard.

We had lunch on the Theron and supper at the DAC camp, and altogether it was a pleasant day.

There are now five ships riding at anchor in the harbor, and the view is beautiful from down there. Yesterday there was brilliant sunshine, the temperature in the 50's. The Theron has been painted a clean white and, together with the blue- green water, Grey Mountain peaks spotted with snow and the brightly colored Danish small craft running about, the scene is a delight for a color photographer, or anyone for that matter.

Paul today shuffled the watches, putting Paul Martin, Joe Yeakle and Sam Newsom on. This allows us to stand only a four hour watch every 24 hours. Smitty will continue to do all camp maintenance and the Doc will help. This last is a sore spot.

Sunday, August 10th

I talked to **Merrell** tonight via CW (Morse code). He said everything is packed that can be packed and he was sitting with the speed key in his lap, working from the kitchen. They are waiting for the living quarters to be set up at the new site prior to their moving. Bill Miller and crew came out during the day for sun shots, but the sun was obscured and they had to return.

Monday, August 11th

I returned to the Danish Camp today and finished installing the transceiver and antenna. A group of Danes gathered around me as I tuned up for the first time, obviously doubtful of any results coming from a piece of equipment so small, and battery operated at that. But on my very first call I talked to Sondrestrom and we listened to Bill Miller there talking to various sites on the cap. I instructed Larson, the Danish combination radio operator and accountant, on the equipment's operation and spent the remainder of the day working on the helicopter's radio. The VHF in both 'copters is in poor shape some eight or nine broken capacitors in one. The wiring harnesses are stretched taut bad connectors, insulators and even broken wires. I told Pat he would have to bring one 'copter up to the site and let me take the VHF gear out and work on it in the shop. The other 'copter is now in good operating condition.

I called the boys on the hill and asked them to contact the Theron and ask them to send a boat in for me, as I had an hour to kill; they couldn't reach the Theron, but the Lindenwald said an M-boat unloading stuff on the beach would take me over. On the beach I found Mr. Sharp, watching some heavy equipment put through a road which will run from the beach up to our mountain. He said everything will have to be in shape when a group of VIPs, including a General, arrive in about a week's time. He said that is always the way, VIPs get there when things are smoothed up and the "roughing it" is no

longer necessary. I said from the looks of things they could get white-gloved limousine service from the beach to our site by the time they arrived.

While I was having lunch today a couple of American construction foremen sat down at the table where I was eating and one asked the other if he had found a place to wash his hands yet; to which the other replied, "I haven't even found where you can get a drink of water yet." No telling how long they had been there.

Dye-5 found they could charter a boat locally and move themselves without the help of the Theron and helicopters, and Miller gave them the go-ahead to do so. So we secured our tropo transmitter to them this afternoon. We are now completely shut down except for our communications circuit. Miller vetoed the suggestion we shut down totally during the night and keep a 4-hour schedule during the day. He wants a 24-hour watch. Since both antennas here will have to be moved, the three radiomen will resume standing all watches, leaving the others to move towers.

Chapter 7

Helicopter Down

Tuesday, August 12th

Had a fair amount of excitement tonight on my watch (back on the 4 to midnight). About 10 PM, BW-8 called all sites and asked if anyone had any information concerning AF (Air Force) helicopter 4344. Dye-1 reported it left their station at 2:30 PM and no one had heard from them since. Dye-1 believed the chopper had gone up to Dye-1A, the construction camp about 20 miles away, and might still be there. But they do not have a radio schedule with them until tomorrow morning. The operator at BW-8 suggested sending up flares to attract their attention. Dye-1 said this wouldn't work; the intervening mountains are too high, and besides they wanted to save their flares for an "emergency." BW-8 advised this was an emergency, the 'copter had been declared missing, and the base alerted. The base commander was at the operations shack and was patched onto the radio. Dye-1 then hastily assured them flares had already been sent up, they just wanted to tell them not to expect too much-- they had been tried before without results. About this time, the Icelandic flight coming down from Thule to BW-8 and then to our site, arrived in the BW-8 area and was diverted to Dye-1. They circled and saw flares. The 'copter had made a forced landing 15 miles from Dye-1 on a line to BW-8. There were no casualties-- engine failure had forced them down. Dr. Fenger was aboard, so they were in good hands. Another helicopter quickly made the rescue. This was the third helicopter incident in west Greenland in a month.

This same plane that made the sighting was due in at Ikateq sometime tomorrow, Ikateq being the airstrip located some 30 miles from here which has been hastily re-activated. Pat checked with me about 9 PM to determine their ETA (estimated time of arrival), as they would have to meet the flight and bring passengers, mail and cargo to this island. The best BW-8 could tell us was that the ETA would be tomorrow, so Pat arranged a radio sked for 7 AM. Later, the Corps of Engineers called for the same info, got the same answer, and set up a similar schedule.

So when BW-8 called around 1 AM to say the flight was taking off immediately and would be here in a few hours, and to arrange transportation from the field via helicopter, I was in a bit of a bind. I called the Theron and the Corps, but of course their radios were shut down for the night. I then called the MSTS (Military Sea Transport System) ship Lindenwald and asked them to send a boat ashore with word to Col. Anderssen and also to the Theron. They reluctantly agreed.

The plane came in around 5 AM and Pat flew Mr. Andrews of Western Electric up to the site to look it over. He didn't see much, as the plane had only one hour of ground time. But with him came the pilot and two Icelandic stewardesses. Only Paul and Sam were up to see them, but that is all we talked about the next day. The girls were beautiful, as are most Icelandic girls; dressed in blue coats and long wool socks, and, of course, both had blond hair. Paul says they stuck close to the big Icelandic pilot probably figuring only savages would inhabit such a remote mountain top; and since they spoke no English, I wasn't too sorry I slept through it all.

We did get mail. I got my first letter from home, another from Lee Vaughn saying he will be in D.C. in a couple of weeks and would like to see me, and three check stubs from the office.

Thursday, August 14th

The opposition Bill Miller has been getting from Ludeman and Coddington at Dye-2 and Dye-3 respectively, crystallized yesterday in some heated words over the air. The boys at Dye-3 resented outside help in moving them (they wanted to "stick together as a team") and offered suggestions on every phase of the operation until Miller was forced to remind them the project was not being run from Dye-2 or Dye-3. He said he was through trying to help hurry through the move and was returning to D.C. via Dye-4 and Dye-5. Long discussions ensued in which Ludeman challenged Bill on practically every issue, throwing at him such terms as "the morale of the boys," and "we who are stuck out here." Everyone at our site marveled that engineers, and site leaders, could be so insolent and so far wrong.

Anyway, Miller plans to come here on the next flight and spend a couple of days. I hope we can make it up to him a bit for what he has been through. He has had to pamper every whim and desire of these guys on the cap and when he volunteered to go out on the cap himself and assist, he got nothing but bad words. I hope I get the chance to file a report on observations made here during this summer. Even Merrell, who is at Dye-3, says his comments on the situation (in favor of Miller, of course) would have to be put into 5-letter coded groups before being transmitted.

George has three teenage girls who do our laundry. As I eat supper late, they usually eat with me on the days they wash, this being their pay, together with candy and a can or two of food. They are not used to eating with utensils, but otherwise behave just as any other young girls. Some of them are rather cute, and they laugh and giggle among themselves constantly. Knucklehead or his sidekick, Joseph P. Yoshingidah, usually

keep them in tow and translate (more or less) for us. Joseph P., 12 years old, is the camp jester. Always pulling practical jokes, he parrots anything we say in good English, though he doesn't know the meaning. He is extremely bright, though, and is learning faster than any of the others.

Smitty and crew got the dish off the Dye-5 antenna today and we all helped to lift the tower into its new position. We had to take off the top sections first and we considered using the helicopter to move it into position intact, but Smitty decided the pins wouldn't hold-- or at least some damage would surely result because of the heavy weight.

The snow patches that have been melting and giving us water are growing smaller and as the days grow cooler, melting less, so that we fear our drinking supply may very well vanish before we are ready to leave. The nearest lake is 2 miles away at about 1,000 feet less elevation, so that it would be an impossible task to haul our water by hand that distance. We are keeping our fingers crossed.

I just had my evening chat with Merrell. He says that about 3:30 this morning a plane, Pan American Clipper 121 bound from London to Los Angeles, flew over the site and he talked to the pilot. Of course, the pilot was amazed to find humans in the middle of the ice cap and asked that they not send up any Honest Johns (missiles).

Merrell also said that Miller had stated this morning that he was not going home and would stay up and help move Dye-3. We'll see.

I gave Merrell a math problem that has had me stumped for weeks. He said he would feed it to the IBM machine (meaning Coddington), but he came back in 10 minutes and said the machine registered tilt. Jim has gone only through calculus said he gave up math in favor of Chaucer so now there really is no one to whom I can turn for help on it. Even W.F. Andrews, the man heading up this job for Western Electric Co., is not a graduate engineer.

Sunday, August 17th

The Doc sent home for a box of second-hand clothing, which his wife solicited in the neighborhood, and he in turn gave the clothing to a few of the young girls up here. Karena in particular he dressed up party-style, complete with rhinestones. She is really a knockout and proud! The Dye-5 dish and tower relocation here was completed yesterday, completed except for two guy wires. The electric hammer broke a gear and cannot be used. We could not get one from the Corps and plan to ask BW-8 to send one out ASAP.

But we have had a complete radio blackout for the past 36 hours. The messages are piling up here, but no communications. These polar blackouts often last several days. This one seems to be coincident with an extremely high barometric pressure (29.1 inches at 1200 feet) and Paul has a theory that when the glass begins to fall, communications will be resumed.

The weather has been very bad the past few days. Changing pressure, high winds, overcast, intermittent rain drizzles, everyone is suffering sinus trouble, headaches, etc. George cannot sleep because of rheumatism or some similar ailment.

We did receive a message, before the blackout, saying that the helicopter would be returned to the states by C-124 Aircraft. This releases the Theron to return anytime we are ready and makes greater the chance that we will be returned by ship and not by air. Capt. Maro says the North Atlantic is bad in September and especially in the little Theron, with no anti-roll bars and very little ballast.

We have had some relief from the 5-in-1 rations lately in that the Eskimos have supplied us with fresh fish. Today we had delicious salmon steaks. George used to cook in Massachusetts, where they make fish chowder using fish heads. The boys won't believe this is done in the best of restaurants and most of them refuse to eat his chowder. He served Joe, who has a weak stomach, a dish containing a little soup and a huge fish head, complete with eyeballs.

Tuesday, August 19th

Bill Miller arrived via charter flight yesterday, and left this morning. I believe his stay was an enjoyable one; he was free, for a while, of the pressure he has been under at the other sites. He liked everything he saw here, with the possible exception of the placement of the Dye-5 antenna. But Paul was able to convince him that it could not have gone on another hill that he favored because of styroflex limitations.

Dye-3 was relocated and receiving our signal again before he left. Dye-5 called us from their new position, got an azimuth from Warren, and will be ready to go soon.

Bill said the students can leave here September 7, charter flight to BW-8 and then get the first available flight out of BW-8. The Doc must leave on the first to take a test. Wayne was afraid the schedule would cut him too close, argued for and received permission to leave the first also. The remainder of the guys expects to return via the Theron on or about the 17th.

We have been receiving periodic weather advisories; Hurricane Cleo has been heading straight for our position and we kept its position marked on a map hanging in the radio shack, but this morning it blew itself out and no longer presents any danger.

I am trying to devise a scheme to return home via Iceland. Actually, it would be even closer to get a MATS (Military Air Transport System) flight out of Reykjavik rather than BW-8, and the chartered flight usually returns to Iceland empty, except for mail anyway. Miller vetoed the suggestion, saying my orders were already cut via BW-8, but order-cutting can be an extremely easy affair and I plan to devote some time to figuring out a way. If I have to sit around a week waiting for a flight, it would be much better to do so in Iceland than in Greenland. The fact that my Icelandic visa has expired only makes the problem more challenging.

Friday, August 22nd

Col. Wachendorf visited the site yesterday. The "support" we were supposed to get from the Corps of Engineers has never materialized. Instead, we seem to be supporting them-- certainly with communications and transportation. Yesterday they sent almost 3,000 words to BW-8 through us. The little Eastwind gave us more support by way of food and the little luxury items that we had expected to be able to buy from the CE. Warren and a couple of the boys flew down the day before yesterday and reported the attitude down there was, "What do you guys want here now?" I am supposed to go down soon and tell them how to rig up the ship's transceiver in a shed being built to house the 'copters. But this time it's going to be strictly an advisory basis they will have to supply the workers.

Paul sent in a message listing the departure dates of the students. Jack leaves the day after tomorrow.

Saturday, August 23rd

Paul Wagner, Martin and I flew into Angmagssalik today with Capt. Kobs and Col. Wachendorf. On the way, Bruce stopped at the little village (about 10 houses) of Kulusuk where we picked up Jack and Karena. Jack seems to be serious about adopting her and had gone down to talk to her parents about it again. They said yes, but not eagerly. We were met at the landing area by about 40 frenzied children (school lets out when the helicopter arrives), several officials, the pretty wife of the Danish radioman and the Governor, Mr. Jensen. Kobs and Wachendorf were to have lunch with him. Walking up the road, Paul had a chance to ask him about the progress on the case against the Eskimo who had stolen Ron Rule's suit aboard the Theron last month. I forgot to record that he was caught about two nights after the theft when he showed up drunk, dressed in the suit, in Angmagssalik. He was to repay the \$60 (the suit had been new) by working for the Danish Government.

Bruce, Paul, Martin and I walked down to the waterfront and watched an Icelandic fishing boat being provisioned. It was another perfect day, sunny and warm. A gorgeous blond, the wife of some Dane stationed there, came strolling down and sat near us and admired the scenery. The four of us watching her, trying not to stare, telling each other it wouldn't be long before we get home. Finally the "store" opened and we went in and made some purchases for the kids who visited the site. Jack had had a whole box of dresses sent up for the little girls and a couple of the guys had previously shopped over here and bought gloves, knit sox, sweaters, etc. for a few of the favorites. We now bought things for those who were left out the first time. These children are very poor and are extremely proud of anything new. They look good, too, when dressed in anything other than their usual torn and patched hand-me-downs. When we first arrived, Tony had to stay home on the day he washed his clothes as he had no others, and he was not un-typical. Aldora is just about coming of age now, and not unlike my own teenage niece at home. A new sweater and a pair of wool gloves and she was transformed. Some Danes at the hospital told Jack that "you Americans will spoil those children at Kulusuk." Jack replied it would be difficult to spoil children who had nothing.

We have become very attached to the little group of Eskimos that visit us nearly daily. They know us all by name now and are very affectionate. Most of them seem to be way above average in intelligence. Sam and Martin play cards with them nearly every day and, when they do, it is their game, Eine Trueve (twenty-one). Even in the daily baseball game, we follow their rules, as they seem to make more sense on the rough terrain, which makes any infield play nearly impossible. So while a month ago we used to stand on the sidelines and laugh as three of them ran from second to third base at the same time, any evening now you can see Smitty and Yeakle both standing on second base simultaneously.

Any time we give the children something special, the parents usually show up the next day to thank us. They are all very shy, but somehow know the giver in advance and walk up, shake hands, bow slightly and repeat "cuená" Eskimo for "thank you."

Just as I was writing these words, Aldora, Karena and Alicia came into the radio shack to warm themselves over the gas stove we use to make coffee and heat water to bathe while on watch. The kids looked so cold that I offered them coffee, something we never do in the radio shack as there are so many of them, and more can come running anytime. Anyway, I made an exception. Karena poured and they each self-consciously spooned their own sugar and powdered cream. Then they all sat around in a half-circle facing me, radiantly happy, but unable to speak to me. Afterwards, when they were ready to leave, each came up in turn and shook my hand and said "cuená."

When they went out, Knucklehead came in and there was nothing to do but offer him coffee too.

There is a little farewell party in progress over in Jack's tent which I can't attend because I am on watch. It is now 2 AM and he leaves at 8 AM. We have grown used to seeing a group of three or four children, the oldest perhaps 14, setting out on the four-mile hike to their home at one AM on a pitch black night. They have extraordinary vision, probably due to the great amount of vitamin A derived from the quantity of seal they eat. Late hours mean nothing to them, as they sleep any time they so desire, and for as long as they like. I have seen them play baseball at 11 PM when I couldn't even see the ball. Occasionally, if it is cold or they are tired, a few may stay overnight, sleeping on the spare cots. I don't see how they survive the fierce winters up here, as one often sees them shivering even at 30° and the Danes say they wear pretty much the same clothing year round.

The Aurora Borealis is beautiful tonight, a huge shimmering green and blue curtain folding and unfolding across the sky. But with it comes the normal radio blackout. Not even Radio Moscow is audible tonight. Speaking of that station, a few nights back I heard a half-hour talk, beamed at the Asian countries, entitled "American Colonialism." I learned that Wilson twice invaded Mexico during the first World War, but the American armies were repulsed. We did succeed, however, in conquering most of the Caribbean Republics.

Sunday, August 24

I rode over as far as the village on the helicopter with Jack as he was taken to the airstrip. He had agreement with his wife, Karena, Karena's parents, and the authorities to adopt Karena and take her back to the States with him.

Stopping in the village, we went directly to Karena's house to pick her up. Jack thought she would be prepared to leave with him. But when it came to actually turning her over, Karena's parents couldn't go through with it. Jack did his best to persuade them, but then had to break it off to make connection with the flight at Ikateq. When all was said and done, Karena appeared content to stay with her parents.

Thursday, August 28th

The first few days of this week we were visited by Mr. Charles Peterson of the National Bureau of Standards, Chief of the Ionospheric Propagation section. He designed one of the transmitters we are using and came up to help us in a frequency change. A more amiable and interesting engineer I have never met. Mr. Peterson is about 45, dresses smartly and looks younger. He is extremely well-traveled and a good story teller. He certainly broke the tedium of life here and we were all sorry to see him leave Wednesday for Denver, Colorado. He answered all of our questions about parabolic antennas and associated propagation with authority; spent some time reviewing "my math problem" and at length agreed the book appeared to be contradictory; gave Paul his antenna calculation, left us his shoe polish, reading matter, even medicine he was carrying for upset stomach.

Tuesday night he described to me the delights of Spain, in which country he had worked on his last assignment. He told me that if he were in my shoes and single, he would go to Spain this fall instead of GWU. He said I could live there like a king for only a few hundred dollars, up to the end of this year!

The new circuit (Golf) went into operation Tuesday and the signal was unbelievably low at Dye-5B. We have done some preliminary swinging of our antenna in the horizontal plane (one degree to either side and the signal drops to nothing), but the real symmetry signal test must wait until Dye-5B can move their dish and right now they are in the midst of a severe storm, with snow and winds to 70 mph.

This evening we received a call from the CE camp. One of their men had blood poisoning and they wanted to communicate with the Theron to get a 'copter to fly the man to the hospital at Angmagssalik. The Theron was not guarding our frequencies. We fired flares and smoke grenades, hoping to attract their attention, but without success. The CE finally got a boat and went out to the Theron and gave them the word. This incident drove home to all of us the spot we would be in if one of us should need medical attention during the night now that Jack has left. I talked to Pat on the Theron and he agreed to find a way to put a speaker in his room so that he could hear us if we called at any time.

Kelly reported from Dye-5B yesterday that his micropot calibration standard may be off

by 10 db, but we won't know until it can be returned to the Bureau of Standards for recalibration. The error would be in our favor.

Saturday, August 30th

The storm finally abated in Iceland and we tried to increase signal level by moving the transmitting and receiving dishes. We picked up 5 db by raising both dishes $\frac{1}{4}$ deg vertically, but this is not nearly enough. Even with these 5 db and the 10 db we may gain from the calibrator, we still need 14 db more.

Miller will attend a meeting in N.Y. Tuesday and the decision will be made then whether to continue testing from another mountain peak or to pack up and go home.

Wayne is due to leave tomorrow. Late last night a heavy fog moved in and is still with us, showing no signs of dispersing. If it should continue, he would be unable to catch his flight at Ikateq. It is amusing to us, because no one has ever been more concerned about getting a flight on time than Wayne even to the point where he unwisely stood up to Miller and insisted he be allowed to leave early. Just now all the boys are laughing at him because he gave the helicopter pilots on the Theron a report that "visibility up here is one mile" when actually you can scarcely see 500 feet.

Sunday, August 31st

Wayne did get off as scheduled, the fog and rain lifting miraculously just long enough for the trip to Ikateq and back by 'copter. An extra flight has been scheduled for this coming Wednesday and I mentioned to Martin, who is due to leave with me next weekend, that if we could make that flight we would get to BW-8 just in time to get our affairs straightened out there and catch the Friday flight to McGuire AFB. If we were to wait until Sunday, we would probably have to wait until the following Friday for a flight out. A couple of the boys were listening and told Paul of our conversation. I was a little angry, because I wanted to broach the subject to Paul in my own way and at the right time. Sam later came to me and said he had not specifically repeated our conversation to Paul-- it had just leaked out in conversation. He looked really sorry about it. Of course, the whole thing was trivial and I told him so, but the incident points up the fact that each man here has become increasingly thoughtful in his treatment of the other men. Any of the old antagonism from the first days has gone completely and we are now a harmonious, close-knit group. I cannot remember when even the smallest argument developed among us except, of course, the friendly arguments that all men have. Jack and Wayne, of the entire group, had the personalities most alien to me and I rather believe most of the fellows felt the same way. Jack was always aloof, padding about in Annapolis Academy robe and slippers. Free of the work and activities of the camp to a large extent, he devoted most of this time to his studies and Karena, with frequent visits to the hospital at Angmassalik, where he would spend the day talking and drinking tea.

Wayne got on my nerves mostly because of his personal habits-- little things such as loudly sucking each finger at the table instead of wiping his hand on a napkin; his habit of dawdling 15 minutes over his coffee while Paul or I waited to be relieved of the radio watch to eat; his boasting of the advantages he would have in a college education to

Joe and Smitty, who will never attend college.

The weather has become worse and so has the food; we are reduced to a very monotonous diet of three menus of 5-in-1 rations; the testing, the very purpose for our being here, has developed if not into a farce, at least into a waste of time (on the Dye-5B circuit) and all this together might conspire to make morale low, but it hasn't. Besides, today I read Peter Freuchen's Vagrant Viking and feel as if we are living in luxury after reading what man can and has endured in Greenland.

Several of the Greenlanders knew Freuchen and Rasmussen and one, Wilhem, told us stories one evening at the dinner table of his travelling with Rasmussen. This same Wilhem has a daughter studying nursing in Denmark. It is his family I mentioned earlier as having posed for photographs dressed in the colorful dress costumes.

School has started so that we don't see many of the younger children up here anymore. Tony, Chewdee and Joseph P. usually eat with us and spend the night. Sam has become very attached to Chewdee, an extremely attractive youngster of about 12. George told me that Sam's great attraction to boys this age is due to the fact that he lost a brother, also 12 years old, and he has never gotten over it. These boys stay clean and neat, but when they spend a day or two at home and return, they smell the old Eskimo smell of seal. Tony says the dogs sleep with the family in the one-room hut, and most of the family share a common pallet; the others sleep on the floor.

Monday, September 1st

The weather continues bad with winds to 70 mph and heavy rain. Jamesway tents are poor protection against rain. On the windward side it streams in around the door and windows, and there are innumerable leaks. I had to drill a 1/4" hole in the floor of the radio hut to allow the standing water to escape, and when another pool threatened the NBS frequency counter; I hastily grabbed one of Paul's bath towels to build a dam, which action he took philosophically.

I have developed a rather bad cold, complete with cough and sore throat. Sam rummaged through the drugs Jack left and found me a bottle of anti-histamine tablets.

Our snow pile has completely stopped running and we now have to make a flight every other day to a lake 2 miles away for water. Even with the 'copter it's hard work and we usually come back soaked.

Warren volunteered to take my watch tonight as he had some computations to make. I went down to the cook shack and played poker with Joe and George. I won \$75.

Wednesday, September 3rd

Winds still blowing, rain continues, living conditions more miserable than ever. I spent last night aboard the Theron, as they had transmitter trouble (broken wire in the handset cable). I took a hot bath in the Captain's bathtub, the first one since leaving home, and felt like a new man. A good night's sleep between sheets and three good meals, and

then back to the site. All flights made this last week have been on a moment's notice at those rare moments when the weather is clear to 500' visibility both at the ship and the site. The tricky cross-wind landings these guys make in blowing fog take real skill. Today's flight from Iceland to BW-8 overflew Ikateq because of the weather.

Testing of all paths except Golf and Foxtrot is complete today, and the boys on the ice cap are just waiting for the momentary arrival of orders to pack up and go home. Everyone is on the air tonight with jokes and light banter, fairly certain they will get permission to leave tomorrow.

Joe Forno radioed word for Martin and me to get the Flugfelag (subsidiary of Iceland Airlines) flight tomorrow at Ikateq, either to Iceland or BW-8, depending on where it goes. He said we can get a MATS flight out of Keflavik. So Paul and I were completely packed by bedtime, with fingers crossed against the weather.

Chapter 8

Going Home

Thursday, September 4th

Paul shook me this morning at 7 AM for breakfast. Again, the rain was pouring down, the wind shaking our building. I couldn't bring myself to get up in that cold tent, dress and walk down the mountain to the cook tent for the usual three pancakes.

When I did get up, my cold was so much worse I had to take aspirin, but there was neither juice nor even drinking water to wash them down. I used scotch. The first, and hopefully the last, time I drank whiskey before breakfast. My throat felt better.

Outside, everything was wet, cold and blowing fog. The takeoff of the flight from BW-8 was delayed several times. Miraculously, John Bruce dropped the 'copter in between fog banks and got us down to the ship, after making our farewells to the guys.

On board, we received the news that the plane would definitely go to Iceland and that Paul and I could go from Reykjavik to Keflavik without a visa our travel orders would suffice. Good old Joe Forno is really looking out for us.

We signed off the ship's papers and I had the skipper endorse my telegraph license. There is nothing to do now but wait for better weather and an airplane.

Friday, September 5th

I woke up with the sun shining in the porthole, the first sunshine in at least ten days. The boys on the hill have received word to plan the move to a nearby mountain, altitude 2,300 feet. I flew up in the cockpit with Owen to take pictures of the mountain and access. A road will be extremely difficult to build. The mountain rises almost straight up on all sides and the top forms a plateau about 500 feet square.

Smitty and Warren were up there surveying. At least the site does afford a clear shot to Dye-3 and Dye-5B. Smitty says it will be the end of the month at the earliest before they could go on the air.

We then flew to Angmassalik to drop off another Dane for the hospital and then to Ikateq, where we caught the Flugfelag charter to Reykjavik. The pilot told me Forno wired ahead and arranged with immigration for us to be allowed to go to Keflavik without a visa. The pilot said we would probably make the trip in a police car.

Martin and I, and a Dane who spoke no English, were the only passengers and there were two attractive stewardesses. I went up and talked for a while to the Captain about the current situation concerning British-Icelandic fishing rights, then moved back another seat and talked to blond and blue-eyed "Renna," one of the two stewardesses. We talked for about an hour and soon we landed at Reykjavik. I was still a bit fearful that we might be turned back at the gate, but a gentleman met us at the door and saw to our every need. He said the Ministry of Justice had granted us visas and we were free to do as we pleased. The customs man didn't even check into our bags. He called us a taxi and reserved us rooms at the N-Gardur Hotel. He also contacted the civil administrator in Keflavik (Air Force Base) and had the way cleared for us to leave via MATS.

Paul, the Dane, and I took a cab to the hotel. When we attempted to pay, we found it was courtesy of Icelandair. The three of us had a drink in my room. All the rooms had names on them-- girl's names. I thought we were really getting hospitality, but my room was empty.

Down in the lobby a foreigner who spoke some English started a conversation with me. He asked what part of Greenland I had been to, pointing to the beard. The four of us struck off to (with the guidance of the girl behind the desk) the Borg Hotel.

Our new friend was a Danish Geologist. The Borg dining room was crowded with the most beautiful women in the world. Each of them could have easily been a Hollywood starlet. But the place was so crowded we could not get a table. I offered the headwaiter a 100 kroner note (about 5 dollars), still no good. Finally, Willy, the Danish Geologist, snatched a "reserved" sign off of one of the tables and we sat down ordering scotch and soda, at \$2 a drink. The people there were dressed to perfection, and the four of us certainly made a scrounge picture. Nonetheless, I danced with a nearby girl, and she was very, very sweet and friendly. After about 30 minutes, when I returned her to her table, after having convinced her I was not a hated British, I thought I was in. But a local boy beat me to her on the next round of dancing and I danced with her table-mate, who was even more beautiful. Both girls deplored my beard an inkling of things to come.

They left without us, and we cast in our lot with two other girls at closing time (1:30). They told us there were no restaurants open at this hour, but to come with them and we could get something to eat. We found ourselves at an all-night hot dog stand at the waterfront.

There were 50 to 60 people milling around, and Willy pushed into the crowd for us. We were a curiosity to the people there and they stared at us. A few well-dressed men began addressing us in English. After ascertaining that we (Paul and I) were American, they asked if we had ever seen a real Communist before. One of the men, very distinguished looking, a man I had taken to be British, stretched out his hand and asked if I would care to shake hands with a Communist. I said "delighted" and pumped his hand. After that we were in, and several of the men crowded around to explain Icelandic politics to us and assure us that there were really only about twenty percent Communists in Iceland.

Our girls grew bored with the discussion and drifted off. We let them go. Two more drove up in a car and I had a long conversation with them. They told us there was nothing to do so late at night in Reykjavik.

So finally Paul, the two Danes and I walked back to the hotel, lonely and unhappy. We passed ducks swimming in a park lake, and Willy-- who is something of a scientist and wears a French decoration-- said he would catch me one to eat if I liked.

Saturday, September 6

The next day we learned there was to be yet another dance that night at the Borg Hotel, so we all decided to change residence to the Borg to be closer to the action. This time we reserved a table and bought some new clothes. We spent the afternoon in a coffee house which was brightly furnished in light-colored wood, with classical music in the background. It was most appealing after the tents of Greenland.

That evening while dancing with an Icelandic girl, she asked, "Are there no razors in Greenland?" When the music stopped, I went straight to my room and shaved off the beard. When I returned and continued dancing with the young lady she pretended not to notice the change. But I felt more civilized (besides, the darn thing itched) and as the evening wore on, I realized my small sacrifice was a smart move. The girls just hadn't been all that keen on beards.

Epilogue

On September 13 at 1500 hours, eight days after I left Dye 4, a storm hit the site. It began with snow and moderately high winds. The snow later became mixed with rain and sleet, and wind velocities were estimated to have reached about 140 mph. According to the Project Final Report, "When the storm struck, Dye 4 personnel were awaiting instructions to move to an alternate location. Dismantling had been almost completed. One tent had been taken down and stored. Both path test transmitters were down and packed...miscellaneous items were stored under a tarpaulin approximately 150 feet southeast of the electronics hut. The aero vane wind indicator was packed for shipment. Two Dye-9 bulldozers left by the Corps of Engineers were parked around the Jamesway hut which served as the kitchen. Records and small items of equipment were in cardboard boxes or lying loose in the huts with the idea of placing these items in the helicopter at the time of the move.

"The day before the storm was foggy in the morning and fairly clear in the afternoon. The new site still had a single cloud around its crown all afternoon, making flying to the top impossible.

"During the morning of the storm a helicopter tried to land at the station, but the wind gusts were too strong for a safe landing. Later in the afternoon, wind velocities began to increase but not to an alarming degree. As the day wore on, the wind appeared to be increasing and the wind indicator was again erected. At 2100 hours a report was received from the radio shack that winds had risen to 100 mph in gusts. (The highest recording obtainable on the wind indicator was 100 mph. According to reports, the indicator remained at the 100 mph mark for several seconds, indicating a velocity higher than 100 mph.)

"About this time, the camp started to show the strain of the storm. The top coverings of the Jamesway huts started to pull apart. They flopped up and down and finally pulled off of the ribs leaving a gap through which the wind and rain entered. Personnel immediately tried to replace the coverings and reinforce the ends of the huts with additional ropes. The wind continued to gain strength making the efforts of the men ineffective.

"Part of the crew had already taken shelter in the kitchen. The four men who had remained in the electronics hut formed a chain and, with almost super-human effort, negotiated the 500 feet downhill to the kitchen. At just about this time, the electronics hut collapsed after the canvas pulled away from the metal eyes over the door frames. The anchors, however, were not pulled loose and the door remained standing. The sleeping hut collapsed next and its contents, including the cots, were strewn about the station. Here, too, the anchors stayed in place.

"After remaining in the kitchen for about an hour, the men were afraid that this hut would be blown down too, and they took shelter under a collapsed 10-man tent, the canvas covering of which was still fastened to the ground. The canvas was not waterproof, but the men remained under its cover for about two hours. All were thoroughly soaked. Upon noting that the kitchen hut was still standing, although some of the canvas had loosened, the men returned to it. By bracing themselves against the arches they kept the hut from collapsing and remained there until about 0800 hours the next morning when a Corps of Engineers truck came to their aid. They were treated for shock and exposure and were fed at the Corps of Engineers Camp. Radio contact was made with BW-8 from the M/V Theron.

"After the storm) the Jamesway which served as the kitchen was the only structure that remained standing. All the items sheltered in the electronics hut were scattered over the hillside. The ten-foot antenna had been flown about fifty feet. The huts were totally destroyed. The supply tent was blown over but still anchored."

My conversations with survivors indicated that they protected themselves by crawling under the huge D-8 bulldozers. I didn't feel I had missed a thing by leaving the site

before the storm hit.

I haven't heard from any of the members of the Dye-4 or Dye-1 team in the last 30 years, but I have stayed in touch with Jim Merrell, Dave Coddington, Bob DeSantis, Harry Ludeman and Bill Miller. On reading a draft of this diary, Bill Miller was able to find a copy of the official Final Report for the project, from which I made extracts for the introduction and epilogue sections.

Dave Coddington, who was Site Manager at Dye-3, commented on the apparent running feud between Bill Miller and himself as follows: "Bill and I became really good friends in the years after the Dew East project. I worked with him on Turkey Trot, SoPac, and several other projects. Bill's modus operandi was always a crash bang affair leaving it to others to come behind and clean up after him. I think that in the stressful days leading up to the move of Dye-3, I had a very strong reaction opposed to his providing his 'help.' In any event, the move was made most successfully using the C-123's and done in record time by only our own crew.

"Dye-3 had a fabulous cook. Almost from the day we landed, he wrought magic with the 5-1 rations supplemented by very limited additional items from Sondrestrom. However, he was very much underpaid compared to the rest of us (and thus my suggestion to Bill that we increase his pay) and was terribly homesick. We were resupplied about twice each week by a C-123 from Sondrestrom. Each time the plane would land, Jim (the cook) would walk out to the plane and try to board. Each time, I would go out and convince him to stay. In the end, he saw it through and thanked me profusely for my persistence. Bill's comment by radio about closing down the site simply because the cook would quit is pure nonsense--- this was never an issue."

Shortly after the tests were completed the Air Force proceeded to build the extension of the Dew Line (called "Dew East") based in part on the results of the tests we had run. Though the tests may have been valuable to the safety of the Free World, it is questionable whether anything of value was obtained from the many diaries we kept. For my part, I returned to Washington in time to continue the fall session at George Washington University. At the next college summer break Page sent me to Ponape in the West Caroline Islands, east of Australia. And in the following spring I graduated and joined Page full time. My first assignment was in Istanbul, and flying there from New York we looked down on Greenland and I imagined I could see Knucklehead's village. Though I was subsequently to overfly Greenland many times, I never again returned there. The bearskin rug is now the possession of a nephew.

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