

Ivan “Bud” Sherlock writes that he was born on 14 June 1938 in Port Arthur, Ontario which, in 1970 amalgamated with Fort William to become the city of Thunder Bay. He joined the Royal Canadian Navy in June 1955 (age 17) at the stone frigate HMCS GRIFFON there and took the two day train trip for his New Entry Training at HMCS CORNWALLIS near Digby, Nova Scotia. This Basic Training in Naval Seamanship commenced in July and concluded in November 1955 and, because all those who joined the RCN from Port Arthur and West were classified as Esquimalt Ratings (-E behind their Official Number), Bud was drafted to HMCS SOUIX on the West Coast for training as an Engineering Mechanic. Having spent 8 months at sea, he then was drafted ashore to HMCS NADEN for the classroom phase of his Trade. Bud was next drafted to the Minesweeper HMS COMOX, which a year later transited the Panama Canal (it was my third passage through the canal) to arrive in Halifax, Nova Scotia where an East Coast crew took her over. The West Coast sailors took the long train ride back to Esquimalt where most of us were to commission the new Destroyer HMCS FRASER DDE 233 in 1957. I applied for, and was approved to take a Ships Diver course at #2 OCDU (Operational Clearance Diving Unit) in 1958, and a few short months later I took the course to become a Clearance Diver (CD). As I recall, we started the course with 10 to 12 volunteers, and at the end of it there were 6 to 8 of us qualified and graduated as Clearance Divers Trade Group 1. This training included about 4 to 6 weeks of diving in the Sladen Suit, using Clearance Diver Breathing Apparatus (CDBA) on mixed gas. The Sladen Suit was a front entry (umbilicus) type, with the use of heavy boots for plodding on the bottom. The CDBA breathing hose was connected to the soda lime canister, and to a mouthpiece that was fitted into the helmet. After Sladen, we progressed to swim gear using the Dunlop (so-called!!) Dry Suit, with CDBA in the Oxygen mode. Dunlop Suits were neck entry with a flexible rubber hood that pulled on over your head and you needed your buddy to assist you getting into the suit through the neck opening. The body and the head were sealed off with a large clamp to prevent water ingress. We also did Standard Dress Diver training, and had to “spindle” when returning to the surface. At this time, wet suits became available on the civilian market, but the RCN did not have them yet, however we were given permission to purchase them out of our own pocket and to use them for much of the rest of our training. The following is a timeline of some of my activities in the RCN Diving Branch:

- 1960 First trip to the Arctic doing beach clearance for the DEW Line sealift.
- -?- Various mine countermeasures and ship repair stints on different Tenders.
- -?- Full Trade Group 2 CD course of 6 months. Shortly after completion, there was a conversion Course of 3 weeks for all who were not yet Trade Group 3’s and when completed they were advanced in the Trade.
- 1966 January to August took Trade Group 3 course at FDU(A).
- 1966 Drafted to Defence Research Medical Laboratory, Downsview via FDU(P) & HMCS YORK.
- 1970 Drafted back to FDU(P) Ship Repair.
- 1973 Trade Group 4 (now 6B) course at FDU(A) from August to April 1974.
- 1974 Drafted to FDU(A) I hadn’t even finished the course yet, to be Senior Instructor at the school!!
- 1975 Drafted to become Pilot and Maintenance Crew Chief on the ROV SDL – 1.
- 1979 In the Spring was drafted to FDU(A) for Life Support Systems.
- 1980 In June went on Rehab Leave to retire from the RCN.

Looking back on it all, I had a good career in the Royal Canadian Navy and the Diving Branch. The fact that they wanted to move Divers from the West Coast to the East Coast in 1974 was, in my mind, a mistake, as we were not trusted by many of the East Coast Divers. It didn't seem to matter that we were highly skilled Divers – there was always that feeling that we couldn't be trusted. Those of the same Rank agreed with us most of the time. When my time was up I couldn't wait to get out of there, and retired from the RCN taking Rehab Leave. Most of the Divers were great and, of course, as part of a team we trusted each other with our lives on many occasions. It was the politics of the place at that time that was slowly destroying East Coast/West Coast interrelationships, and it was coming from the top. One of the projects that I had a Trade Group 6B class undertake was to get the plans of a training float from the West Coast, use them with modifications, and design a similar one for the East Coast. After they had that completed, it was presented to the Commanding Officer, and many other Senior NCO's. As a result, the CO, LCdr Bob Coren, who had never set foot on the West Coast before, decided to take a trip out there. The new training float was eventually built, which improved the Diving School's training on the East Coast!!

I moved back to Thunder Bay, Ontario after retiring from the Navy in 1980. I knew the Staff Officer at HMCS GRIFFON and he asked me to meet him for lunch one day. I had joined the RCN at GRIFFON, so it was easy for me to visit it again after 25 years away. While there, I was asked if I would like to recruit students for the Summer Youth Employment Program. Since I was still on Rehab Leave, they would cover the costs under "Volum", which in effect paid me double time. I finished recruiting for this program, and was asked if I would be the Chief in charge of training the 75 young people over the Summer period. I agreed and did that for the Summer, then as a Naval Reservist, I carried on with their training over the Winter. I stayed with the Naval Reserves for a further 5 years, then decided it was time for me to do other things. During that 5 year period, I organized the Reserve Diving Unit at HMCS GRIFFON – here we were on the largest lake in the world, and no Divers!! Ed Dalton, who was a CD with Red Larsen, and now a Commander(R), informed me that he was a Clearance Diver, and I asked him why he didn't have his diving dolphins on his Naval uniform? Ed didn't realize that once earned, they cannot be taken away. He sent for his CD qualification badges and proudly wore them thereafter. In 1980 – 81 I went to College and wrote my 4th and 3rd Class Stationary Engineers papers, followed by a further 17 months of night school to attain my 2nd Class qualification. I worked in the steam plant of a paper mill for 4 months, at which time the job for a 3rd Class Engineer opened up at HMCS GRIFFON, so I applied for and got it – straight days, no shiftwork, marvellous! I worked there until I retired for the last time at age 61. I do volunteer work only now. I was on the Board of Directors for the 55+ Seniors Centre, eventually becoming the President. When that was over, I moved on and took Hospice training, and I now do end of life hospice volunteering for Hospice Northwest.

In a second section Bud Sherlock went on to say, as the title of Willy Nelson's new book read "It's a Long Story". I can't remember exactly what date it was – probably pre 1965 – when RCN Surgeon LCdr Derek J. Kidd (retired as an RCN Surgeon Captain) showed up at FDU(P) to show all of us his new Dive Computer. It was very small, about the size of a tube of Cream of Wheat in those days. It was made of brass and had a pressure(depth) gage on the top. A very simple looking gadget, but as I was soon to discover, its simplicity was to change the diving world and decompression times, with treatment of decompression sickness changed forever. I think the USN repetitive Dive Tables had only been in use for about 3 to 4 years, and they were also changed using Canadian expertise as time went on. Dr. Kidd asked for a team of volunteers, who then commenced the experimental chamber dives. I cannot recall exactly how many we did, but we were diving deeper, and longer in the RCC with each dive, while Dr.

Kidd monitored the dives with his computer. After one such dive, I cannot remember the dive profile, I surfaced and in less than an hour I was having trouble breathing, as well as a tingling or no feeling from my chest nipple line down and I could not urinate. I was put back in the RCC, with Dr. Kidd starting a treatment Table on me. Most of my feeling came back, and my waterworks, while not completely normal, had shown a marked improvement. I ended up going through Table 4 of the Standard diving treatment Tables. After completion of Table 4, Dr. Kidd wanted me to stay at the Dive Unit for 24 hours, just to make sure everything was OK. He gave me a regular physical check-up, and at one time noticed a progressive weakness in some area. Back in the RCC to be treated with another complete Table 4! Another one of my memories was being asked if I wanted to be drafted back to Toronto(DCIEM) for another two months in the Summer of 1965. I jumped at the chance. Even though I had previously encountered trouble diving with this new computer at FDU(P), and had to be treated for Type 2 bends(CNS – Central Nervous System involvement), it just seemed to draw me closer to this project. There was a team of Clearance Divers drafted to DCIEM(it was once called Defence Research Medical Laboratory – DRML), as well as a team of RCAF Bioscience Technicians, myself, Bud Sherlock from FDU(P) and Fred Watts from FDU(A). There were also a couple of Naval Reserve Ships Divers, one of whom was George Onley, brother of the Governor General of Ontario – George was still in University at that time. I'm sure there were occasional hits with various dive profiles, but it became almost common to treat for pain only or skin bends with a dive to 60 ft on O2 for about 30 minutes and head for the surface at a foot a minute. I think there were a few minutes at 30 ft. I have no recollection of when we started this, it just seemed to happen, and it worked very well. Others may remember when this treatment was started. When the Summer was over, I flew back to my normal job at FDU(P). In the Fall of 1965 I was informed that my 8 month long Trade Group 3 course was going to start in January 1966 on the East Coast. I had already completed my Trade Group 1 and 2 course, and now completed the Trade Group 3 course(it was mainly a refresher of the other two courses), arriving back home on the West Coast in August 1966. Overall, I now had 20 months of "Trades Training" and went on Annual Leave for a couple of weeks. Nearing the end of my Leave, I remember phoning the Diving Unit to ask what Tender I was going on. The reply was "Why are you not in Toronto??" Guess somebody screwed up and completed the paper work to draft me to DCIEM, but forgot to notify me – I now had a wife with three young kids to get moving!! They wanted me to be there in two weeks, but it was probably closer to a month before I got out of town. It would be October 1966 I was in Toronto with my family. When I arrived in Toronto there was no housing available, the only place I could find close to work in a city of "No Children" highrises, was a place that wanted a two year lease and rental of \$280.00 per month. As a Killick(Leading Seaman) in those days, I was only making \$360.00 a month, so I ended up moving my wife and kids to live with inlaws in Port Arthur, 900 miles northwest of Toronto until we could find a place in Downsview. Besides no place to live, the kids had to have a local residence in order to start school. When I requested Leave to drive them up to Port Arthur, I was told to put my wife out to work!! My response was that if my wife has to work so I can keep my job in the Navy, I'll quit – needless to say, I was given the Leave, but it was not a very good start to my life working at DCIEM.

In a third section, Bud Sherlock continued the tale, stating at this time there was an RCAF Wing Commander, Charlie Bryan at DCIEM who was a WW 2 Air Force veteran with a PhD in Respiratory Physiology. Like many of the military scientists, he enjoyed having coffee with the Divers first thing in the morning. One morning he told us the story about China and India, as follows:
China had attempted to invade India at one time(I have no date for this incident). The Chinese had marched up mountains on the Chinese side of the border, and were now at high altitude. The Indian Army found out about this, and using an elite Regiment of Airborne Troops, parachuted in to stop this invasion. The Chinese were acclimatized to the high elevations because they had slowly moved to the

higher altitude, whereas the Indian Paratroops were now acutely exposed to altitude, and once on the ground in these high mountain passes, within a short period of time, 30 minutes or less, they were getting altitude sickness. If you have never been sick from altitude, it just becomes more progressive as you climb, since your body tries to adjust to the low Oxygen levels and goes into survival mode just to maintain your life. Within a short time the most important battle for the Indian Army was personal survival. In those days, the only way to survive was to go to a lower altitude, or breathe Oxygen. Cerebral edema and pulmonary edema would have killed many if they didn't get to a lower altitude. I have never read any of this history, but it would be an interesting story if you could get information from both sides on what they observed. There probably was not much of a battle, the Chinese would just sit back and watch the enemy collapse in front of them!

Because of the physics and physiology, body chemistry(ie gas laws) reactions at altitude are the same as at depth, it was easy to go from one to the other for a Diver. All altitudes and depths in those days was in feet. About that same time Dr. Kidd sent myself and a Navy Lab Technician, Bill Burgess to Boston (Watertown), Mass. USA for a technical workshop to be able to operate a small portable blood gas analysis machine. We could use it in the RCC, as well as at altitude. Somewhere along the line, Dr. Bryan had decided to try changing the pH of the blood in the direction of alkaline(high altitude) using a diuretic. He chose two, Diamox (acetazolamide) and Lasix (furosemide). The dose was 250 mg twice a day – I believe that dosage has been reduced over the years. The theory was to chemically stimulate the body to change itself as if it was at high altitude. Basically you urinate out bicarbonate and breathe out CO₂, changing the pH more to the alkaline as is found at altitude. The end result at low altitude is not only urine volume increasing, but tingling of the fingers and lips take place. When this occurs, you are ready to go to altitude. Trials were set up in the altitude chamber and Bill Burgess was chosen to do the blood work. I don't recall any Divers being used as subjects in the altitude chamber, but it is quite possible they were. The RCC and the altitude chamber were in the same room, and Divers were usually available as subjects for the various testing on different projects of a short term nature. After some preliminary tests in the lab and altitude chamber, it was then decided to do field trials. The St. Elias Mountain Range, and Mount Logan in the Yukon Territory were chosen. Mountaineer support staff was provided by the Arctic Institute of North America for a base camp, a mid-altitude camp and a high altitude camp. A small civilian aircraft flew between the camps with supplies, field staff, researchers and subjects, as required. The first Summer event was in 1968. Bill Burgess was scheduled to go as the Lab Tech, but a couple of months before leaving, a personal family health problem arose, and he was reluctant to leave town for any length of time. I was the backup on the list and quickly got up to speed on the research protocol for this high altitude study by doing a number of events that were planned in the high altitude chamber. The research team flew to Edmonton from Trenton, then North to Whitehorse, Yukon Territory. We rented vehicles and drove up the Alaskan Highway to Kluane Lake, where the base camp was located. This camp had already been set up by the support people. We did this procedure for the next 3 Summers in 1968, 69 & 70. I can't recall who the subjects were in 1968 and 1969, but most likely were people from DCIEM's research team and the mountaineer support staff in the first years. There was a base camp at Kluane Lake, a mid-altitude camp on the Kaskawulsh Glacier and a high camp at 17,500 ft level on Mount Logan. After a few weeks we returned to DCIEM with the data collected. Dr. Bryan came up with some new questions and we worked on these from time to time through the Winter. I was still heavily involved with the diving computer Lab through the Winter. The Canadian Airborne Regiment was then called upon to be subjects for this study in 1970. It was to be a blind study, with a placebo and Diamox being used. At this time I think Lasix had been phased out for this research. When these troops were flown to altitude, it was easy to see who was on placebo's. It was a repeat of the story Dr. Charlie Bryan had told us a few years before, except there was no enemy, except altitude. The aircraft was able to fly those people out with extreme altitude sickness. That was my last time at altitude, although I think there was a team that went in 1971, but no Divers

that I can remember. When we got back to DCIEM, I went on a short trip to the Bahama's with LCdr Fred Cox to test some new diving gear, and then I was drafted back to FDU(P). I was asked if I wanted to stay for a 5th year at DCIEM, and although I would have been happy to oblige, I was afraid that if I didn't get back to operational diving, my career could possibly suffer. The result of this research is that the use of Diamox for high altitude rescue teams is still to this day one of the tools used by mountain rescue teams. Seen on Drugs.com on the internet, Acetazolamide is used to treat glaucoma, to read, and to prevent acute mountain sickness(altitude sickness). It is also used as a part of some treatment plans for congestive heart failure and seizure disorders. One other physical effect of high altitude is the rupture of some arteries in the back of the eye, causing partial loss of vision – a few speckles in my case. This does not happen to everyone. One of the newer treatments is simply placing the sick person in a plastic bag (zip lock??) and then pump air in it using a hand pump thus giving the patient an ambient pressure inside the bag of a lower altitude. I read this information only recently, but the article didn't go into much detail about breathing gas, or introducing O2. Also came across this information recently; cancer cannot grow in an alkaline O2 rich environment. Solution, give the patient Diamox and send them to altitude on O2 for a month. This last bit is probably someone's theory, but it would be interesting for some researcher to take it to the trials level.