

CNAV SACKVILLE MEMORIES

**By
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I arrived in Halifax in early September 1962 as a new graduate student in the Dalhousie Department of Oceanography. After my wife and I had got settled in our apartment near Dalhousie University I made arrangements to meet the Sackville in North Sydney which was on cruise S-65. A week later I got on the evening train in Halifax to arrive in Sydney early in the next morning. As previously arranged I was to meet Dr. Mike Keen, my graduate advisor, there to join his cruise for the last part. Mike met me, after I got off the train, at the Isle Royal Hotel and we took a cab over to North Sydney where the Sackville was berthed at the Point Edward Naval station. Mike and the rest of the scientific crew looked pretty tired after enjoying the local nightlife the evening before. The ship had come in for fuel.

Later in the afternoon the ship sailed even though the weather was deteriorating. The scientific work to be done on this leg of the cruise was to carry out bottom gravity survey stations on the Laurentian Channel and Scotian Shelf areas. Allan Goodacer of the Dominion Observatory and two of his summer student were to carry out this survey work. The other tasks of the cruise were to set off explosive charges using old naval depth charges off shore in a series of lines for seismic refraction studies of the Scotian Shelf crust. The resulting seismic signals were to be recorded on two land based seismic receiving stations along the Scotian coast.

Within an hour of leaving the harbour the ship stopped to carry out a bottom gravity measurement station. This consisted in lowering the bottom gravimeter over the side to the bottom. Then the ship must hold station well for five or so minutes with no motion that might move the gravity meter while on the bottom. The gravimeter was in about a half meter diameter sphere mounted on a triangular base with a few hundred pounds of lead weights attached. The electrical mechanical cable led from it to a hydraulic winch on the foredeck with slip rings from where the gravimeter signals were recorded in the ships lab. Even though the ship was having trouble holding station in the increasing wind and sea the measurements were made and the gravimeter started being hoisted aboard. Just as the gravimeter got out of the water and was about level with the foredeck the winch let out a strange howl and stopped with the gravimeter still hanging over the side. Nothing would make it go but the deck crew finally hauled the gravimeter on to the deck with out the winch help. I being keen and a bit familiar with hydraulics from my time in the US Navy offered to investigate the winch. It only took a little while to determine that the winches hydraulic motor's bearings had failed, and as there were no parts to repair the winch, the gravity survey for the rest of the cruise was cancelled. In the mean time the weather had got to a pretty good wind and sea state and the gravity survey staff retreated to their bunks. In the next few days the weather was not great but we slowly sailed around towards the area off Halifax where the refraction seismic lines were to be done.

We successfully completed one of the two refraction lines scheduled when the weather improved during the early part of the day. Then we went back off shore again to carry out another and the last line. The method of carrying out these seismic experiments

was to use old 300 pound naval depth charges and set them off electrically instead of the standard depth charge fuse that set them off mechanically at a preset depth . In place of the standard fuse we placed a couple of pounds of 60% dynamite with a electrical cap. The charge was lowered to the bottom then the ship moved away a bit playing out the electrical cable. When the ship was far enough away a radio signal was sent to the shore station alerting them that a firing was ready and then it was set off electrically with the firing time transmitted to the shore station and it was also recorded on the ship along with the Dominion Observatory time signal. This method had worked well on previous lines but it relied on having good radio reception. As a backup one also agreed before hand that one would set off the charge on a pre agreed time schedule. This way even if the radio reception was poor the land stations still knew when to receive data as well as the Dominion Observatory time signal and the data could be recorded successfully.

The last seismic line was scheduled for later in the afternoon and into the night which would use up all the remaining explosives then the ship would go into Halifax the next day. When the time came to start the line the radio reception was very poor but we planned to do the line anyway as we had an agreed backup shot time schedule. All went as planned and we fired off all the rest of the depth charges on the agreed times. We had about 25 lbs of 60% dynamite left and didn't want to bring it back to Halifax so made up a small charge of it in an old five gallon paint can. We lowered it over the stern bur instead of sinking it floated up beside the ships rudder. This made the Captain Harding very upset until it finally floated away and sank, and then we fired it finishing the seismic work for the cruise.

When we got back into the dockyard the next morning one of the seismic receiving station persons came down to meet us. It turned out that they had not received any data from the night before as there had been a good thunder and lightning storm that previous evening and they did not think we would be firing any charges as it is nor recommended to use electrical blasting caps during thunder and lightning storms. There was no doubt there had been a good storm on shore the evening before but offshore there was no sign if it so we had shot off the charges as planned. This did not make Dr Keen too happy but at least there was little money lost as all the old depth charges were free for the work as the Bedford magazine was still trying to get rid of old World war II stock.