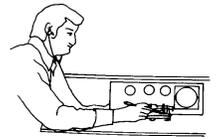




Squelch Tales



A newsletter from the Merrymeeting Amateur Radio Association for March, 2001

TWO BIRDS WITH ONE STONE

By Paul Towne, N1ZYB

Last year Linda and I were very fortunate to be able to experience an adventure that combined two hobbies that we love into one activity. In the late winter I read the book "200 Meters and Down" which is the story of early amateur radio written by Clinton B. DeSoto. A short time later I was looking at the "75, 50 and 25 Years Ago" section of QST magazine. I noticed that in QST of 1925 there had been a couple of articles about how Dr. Donald B. MacMillan was taking the schooner Bowdoin on a voyage of arctic exploration and shortwave radio contacts would be attempted from the far north for the first time. Linda and I had just finished a book about Admiral Peary's North Pole attempts with MacMillan so all of this caught our attention.

Then, in the early spring, we received a catalogue from the Elderhostel program that offered a one-week educational experience sailing on the schooner Bowdoin on Penobscot Bay in Maine. The Bowdoin is owned and operated by the Maine Maritime Academy in Castine, Maine. What could be better? We could have some fun sailing on a two-masted auxiliary schooner rich in Arctic exploration history, attend maritime classes at the school, and stand on a boat that was part of early amateur radio history.

We quickly sent in a registration request. Then we called ARRL and ordered a copy of the July 1925 QST article on the "Radio Equipment of the Navy-MacMillan Arctic Expedition". After we read the old QST article we were chomping at the bit to get to Castine and board the Bowdoin. Unfortunately, the trip wasn't scheduled until August so while we were waiting, I sent an e-mail to Elliot Rappaport, the Bowdoin's captain. In the e-mail I explained that Linda and I were amateur radio operators scheduled to attend the sailing program, and asked if he knew of any documentation regarding the schooner Bowdoin's part in early radio experimentation in the Arctic.

He replied and said that there were some dusty boxes in his office that contained assorted papers from the Zenith Radio Corporation employees and others that covered the subject. We could review these papers when we came up to sail on the Bowdoin.

Finally the day came to drive to Castine and begin the adventure. We had a great week on the 88 foot Arctic exploration schooner and true to his word, Captain Rappaport let us review and copy some very interesting documents on the Bowdoin's relationship with early radio. Here are some of the articles I think you will enjoy.

FROM: Ted Leitzell

Zenith Radio Corporation, Chicago 39, Illinois

FACT SHEET

SUBJECT: How Admiral Donald B. MacMillan and the Bowdoin made radio history.

When Admiral (then Commander) Donald B. MacMillan set sail for North Greenland in the summer of 1923 on his

eighth Arctic expedition, he was leading the first such expedition to be equipped with radio.

Prior to 1923 every Arctic exploring party was lost to the world from the time it plunged into the icy silence of the Polar Regions until it again made physical contact with civilization. Some failed to return, and hundreds of men perished, in many cases because they lacked communication with the outside. On virtually all expeditions, growing boredom led to friction, fights, killings, even mutinies.

Strangely enough, MacMillan was at first reluctant to put radio equipment on the Bowdoin for fear it might make his men homesick, and did so only after considerable urging from his life-long friend, Commander E. F. McDonald, Jr., president of infant Zenith Radio Corporation. McDonald told him that men became bored with each other because they ran out of new things to talk about after hearing each other's autobiography and opinions a few dozen times. He said that news from home would provide new subjects and interest, that the ability of the Bowdoin to send out messages would be a god-send to friends and relatives of expedition members, and might even be an important safety factor.

In the early twenties radio was still very young. Virtually all wireless communication was on what are today standard broadcast and long wave bands. With sufficient power these wave bands would provide respectable distance at night, but during daylight their range was so short that ships at sea were out of touch with land when only a few hundred miles from shore.

What was called short wave, the ash can, in those days is now the home of television, FM broadcasting, radar, and virtually all new services invented since 1923. It was then considered to be commercially worthless, and was turned over to radio amateurs as a playground. These uninhibited youngsters, dubbed "hams", did not know their channels were worthless and began experimenting. Soon they were achieving amazing distances with minimum power.

McDonald knew what the hams were doing because on Zenith's staff were many amateurs who built radio sets at the factory by day and sat up half the night talking with other hams hundreds and thousands of miles away. He was convinced that even with the small power available MacMillan would be able to get messages through to the United States by short wave. He was not concerned about getting messages through to MacMillan during the Arctic night because after dark sensitive receivers would be able to pick up powerful broadcast stations, even when the Bowdoin was ice locked near the Pole.

On board the Bowdoin as a radio operator was Donald Mix, a young ham selected by Hiram Percy Maxim, president of the American Radio Relay League.

For a time after battening down for the winter, the Bowdoin made no outside contact, but the signal was finally picked up by a fourteen-year-old named Everett Sutton who lived in the state of Washington.

Thereafter, communications presented no problem. McDonald had a regular schedule of broadcasts from Zenith's powerful station, WJAZ in Chicago, sending messages and greetings to expedition members. Answers came back by short wave relayed by amateurs from all parts of the country.

MacMillan heard of Harding's death by radio on the day it occurred, in contrast to the years he was in the Arctic after the outbreak of World War I before he knew of the conflict. Mac has never gone to the Arctic since without good radio equipment.

The MacMillan-National Geographic Expedition of 1925 was more ambitious than that of 1923, and produced even more spectacular radio history. When the Bowdoin sailed she had a sister ship, the Peary, skippered by Commander McDonald who was second in command of the expedition. Both ships were outfitted with new Zenith short wave equipment, considerably improved as a result of progress since 1923.

On the Peary were three U. S. Navy airplanes and a Naval contingent headed by Richard E. Byrd, who later achieved fame for aerial exploration in both the Arctic and Antarctic. Along with the airplanes, the Navy provided a powerful long wave radio. MacMillan and McDonald both felt that it would be of little or no value, but dutifully carried it along. In spite of continued efforts, the long wave job never made a successful transmission after they were north of Labrador, while the short wave equipment kept right on hanging up new records for long distance transmission.

On the other side of the continent, the U. S. Fleet was steaming across the Pacific on a good will cruise. On board the flagship Seattle was a young ham named Fred Schnell, commissioned for the cruise at the suggestion of McDonald. Most of the fleet's communications officers looked on his homemade ham equipment with derision, but he received warm support from Commander (later Admiral) Stanford C. Hooper, who was already interested in the potentialities of short wave.

As the fleet steamed west and the MacMillan expedition north, they kept in direct contact by short wave. Half way up the coast of Greenland, McDonald stopped to coal the Peary, but found that the Danish Governor would no permit him to refuel without authorization from the Danish ministry in Washington. McDonald asked him to radio for it, but the Governor's powerful long wave transmitter could not reach out in daylight. This was June. It did not get dark until September, and McDonald needed coal. So, he sent a message by short wave to a radio ham in Washington, who bicycled to the Danish Ministry, and radioed back permission within the hour.

In August, the Bowdoin reached Etah, Greenland, within eleven degrees of the North Pole, while the fleet was off the coast of Tasmania. From that position the fleet was completely out of direct radio contact with the United States by its long wave radio. Messages had to be relayed by cable through Australia or New Zealand, but Schnell's "pin-box" radio kept up regular communications with amateurs in all parts of the United States.

The Bowdoin at this time was in 24-hour daylight, but maintained regular contact with Schnell. One occasion when, for a few hours, atmospheric conditions caused messages from the Seattle to skip Chicago, Schnell was anxious to get some through to a convention of the American Radio Relay League

in that city. One of MacMillan's operators, Paul McGee, heard him, copied the messages, and relayed them to Chicago. That set a new distance record: Tasmania, to near the North Pole, to central U. S. A.

One day when conditions were particularly good, MacMillan put on a group of Eskimos to sing for Admiral Coontz on the Seattle, almost half the world away. He likened their singing to a college yell, which MacMillan says is the best description yet.

That was the start of practical use of short wave in the United States Navy. The navies and merchant marines of the world soon followed, as did international communication.

McDonald also provided radio transmitters and receivers for the Navy airplanes used on the expedition to permit ready contact with the radio equipment of the Bowdoin. One of these transceivers is on exhibition on the Bowdoin.

Through the years Zenith kept the Bowdoin's radio room in tip-top shape with the most modern and up-to-date equipment. When good commercial equipment became available the company discontinued its manufacture of handmade transmitters for the Bowdoin, but sent engineers down before each expedition to check everything over and make sure it was in top condition.

In 1941, MacMillan took with him to the Arctic the prototype of a long wave, short wave portable, since become world famous as the Zenith Trans-Oceanic. McDonald authorized its production only after he received a radiogram from MacMillan, which read:

"McDonald-Zenith-Chicago. In all my years in the Arctic I have never been able to keep in touch with the outside world, as I have been able to with the Zenith Trans-Oceanic portable. MacMillan."

The schooner Bowdoin has been refurbished since it was built and none of the original radio equipment is on board today but Linda and I were able to stand on the very deck in the very same compartment where this radio history was made.

If you would like to read more about the Bowdoin, MacMillan or Elderhostel, I suggest the following web pages:

<http://www.cr.nps.gov/maritime/nhl/bowdoin.htm>

<http://www.elderhostel.org>

73's

Paul (NIZYB) and Linda (NIZYC)

**Don't forger the
MARA Breakfast-
Meeting, Saturday,
March 31st at 9:00 AM
Cook's Corner
Denny's Restraint**

ANDY HAMFEST & MAINE STATE CONVENTION

Remada Inn and Convention Center

Lewiston, Maine

March 30 & 31st

Seminars Friday evening & Saturday Flea

market Saturday

N1JTH/W5YI Exam

Saturday at 12:30 PM

156.5 MHz 5/8 WAVELENGTH VERTICAL

By Paul Towne, N1ZYB

In the middle of last summer, I happened to notice that a man who had just recently purchased a used boat tossed a VHF Marine band radio into the trash bin at the local marina. The next day I fished it out of the trash bin and brought it home, hoping to recover a few useful parts.

In my shop, I discovered that the unit received OK and transmitted a full 25 watts but it would not scan, which is a serious defect for a marine band radio. I thought this might make a good winter repair project so I sent an e-mail to Standard Electronics to see if a schematic and/or manual was available. Turns out that Yaesu has bought out the company and, yes, they sent me a schematic and operators manual free of charge.

Winter came and I prepared to do some serious troubleshooting on this non-scanning VHF-FM radio. Then I noticed in the operator's manual a cautionary note that the transceiver will not scan unless the microphone bracket is grounded to the radio. One quick check with a jumper confirmed that this was the no-scan problem. Now I had a fully functional VHF-FM marine band radio, which was redundant with the unit in my boat. I decided to make this new unit into a "base station" for my wife, N1ZYC. (What a guy!)

Next I needed an antenna for the radio and I considered buying a marine band antenna except these are expensive and they use sea water for a ground plane to some degree. I needed a base station antenna that would have its own ground plane to push against. The ARRL antenna book has design and construction details for a 144 MHz 5/8-wavelength vertical and I thought

this antenna could be designed to work on the VHF marine band. The 5/8 wavelength vertical signal is directed at a low wave angle toward the horizon thereby obtaining a gain of about 3dB over a 1/4 wave vertical. This is a base loaded antenna that uses 1/4 wavelength (19 inch) radials. Computing the correct length for the whip was easy using the standard $11808 \div f$ formula. For the inductive base coil I reduced the turn count by one turn to account for the higher marine band frequency (156.5 MHz). An old CB whip and some number 10 copper wire provided most of the material. Initially I set the base coil tap at four turns from the top of the 9-turn coil. All connections were brazed or soldered.

Getting a good SWR and radiation resistance involves connection to an MFJ SWR analyzer and adjusting the whip length and base coil tap. After a couple of hours of adjusting and analyzing, I was able to obtain an SWR of less than 1 to 1.2 and 50 ohms resistance at 156.5 MHz. The last thing was to give everything but the whip a coat of fiberglass resin. I had some concern that this might de-tune the antenna some but in fact, it lowered the SWR even more. This should keep the marine transceiver happy this summer when Linda answers my call from the boat.

73, Paul

MARCH & APRIL HAM RADIO EVENTS

March

Tuesday 6th, 6:30 pm, **WA1YNZ/ARRL Exam**, Presque Isle, NMTC Augusta Christy Bldg. Rm.113. POC= Wilburn Scott 207- 455-8333

Friday 16th, 6:30 pm **AA1CZ/ARRL Exam**, Saco Middle School, Rt.112. POC= Al Noble 207- 643-8830

Saturday 17th, 9:00 am **WZ1M/ARRL Exam**, Steward Morrill Am. Legion Post-35, 417 Broadway, S.Portland. POC= John Bergron 207-799-3687

Wednesday 21st, 6:00 pm **AE1Q/ARRL Exam**, Togus VA, Bldg 210, POC = Don Smith 207-293-2935

Friday/Saturday 30/31, Andy Hamfest & Maine State Convention, Remada Convention Center, Lewiston.

N1JTH/W5YI exams @ 12:30 pm POC =

Doug Rugg 207-784-2374 before 8:00 pm

April

Saturday 14th, 9:00 am, **W1JTH/ARRL Exam**, Bangor Community Center, Davis Rd.. POC = Jerry Haslett 207-947-8920

Saturday 7th, 8:00 am **Portland Electronics Fleamarket**, Am. Legion Hall 417 Broadway

Sunday 22nd, (morning) MS Walk (MARA support event)

HELP SOMEONE GET A HAM LICENSE!

Merrymeeting Amateur Radio Assoc.

KS1R

177 Sabino Rd., West bath, ME 04530