

Polar Exploration

In the first half of the 20th century, Amateur Radio aided polar expeditions. One lucky amateur — seen here in never-before-published photos — was even included on an expedition.

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For the intrepid explorers setting out to the North and South Poles, wireless communication was invaluable. It had the benefits of aiding organization and logistics while also providing a link to the outside world. Because of wireless communication, the press was informed of the achievements of these expeditions. And for the men who set off to these remote and harsh regions, it lessened the sense of isolation, boosting morale.

The Antarctic

The first explorer to utilize wireless communication was Australian Sir Douglas Mawson whose 1911 – 1914 expedition to the Antarctic was intended solely to gather scientific information. The main base on the Antarctic continent, at Cape Denison on Commonwealth Bay, was able to establish and maintain contact with a base on Macquarie Island (1200 miles away), which in turn was in contact with Hobart, Tasmania (850 miles away) and the outside world. All of this was performed on long wavelengths.

Primarily because of financial constraints, the vessels that accompanied polar expeditions were not fitted with wireless, and contemporary equipment was not practical for transport by sled. And so it was through the Cape Denison link that the Mawson expedition heard that Roald Amundsen's Norwegian expedition was the first to reach the South Pole in December 1911. They also learned of the British Terra Nova expedition, led by Robert F. Scott, who had reached the South Pole a month after Amundsen's expedition — only to perish on the return trek.

Throughout the inter-war period many other expeditions were mounted by Australia,



In Wiscasset, Maine, at the home port of the schooner *Bowdoin* (seen in the background), ARRL sponsors check out the receiver furnished by Zenith for the expedition. From left to right: F.H. Schnell, 1MO, Traffic Manager; K.B. Warner, 9JT, Secretary-Manager; Hiram Percy Maxim, 1AW, ARRL President.

New Zealand, America, Norway, Germany, and even Romania. They employed all manner of transportation — skis and dog sleds, motorized vehicles, fixed wing aircraft, and dirigibles — to reach and cross the pole and conduct their research. Some made it and some did not. But, the use of wireless increased as technology produced more practical equipment for use in the ships, at the bases, and in the aircraft; accordingly, the world became more aware of the efforts of these pioneers. Ultimately, Richard Evelyn Byrd in the periods 1928 – 1930 and 1933 – 1935 conducted the expeditions that established the base known to amateurs as "Little America." The base had to be re-established four more times in various neighboring positions. Little America V was known for its radio capabilities and its use of the call sign KC4USA until 1987, when it was set adrift on iceberg B-9 and vanished.

The Arctic

While the South Pole was located on the Antarctic continent, the North Pole was not as easily definable. Unlike the Antarctic, where the South Pole rests on an underlying landmass, the North Pole lies in the middle of the frozen Arctic Ocean. For centuries, explorers of different nationalities embarked from all compass directions to map the region, conduct scientific investigations, and to determine navigable passages at the top of the world.

From the 1900s through the 1930s, some 40 recognized expeditions occurred, and became increasingly dependent on wireless for communication. For radio amateurs, two expeditions are of particular interest: the MacMillan Arctic Expedition of 1923, which for the first time provided amateurs with an organized opportunity

to participate on medium wavelengths, and the MacMillan, McDonald, Byrd Expedition of 1925, which utilized airplanes and shortwave radios for the first time.

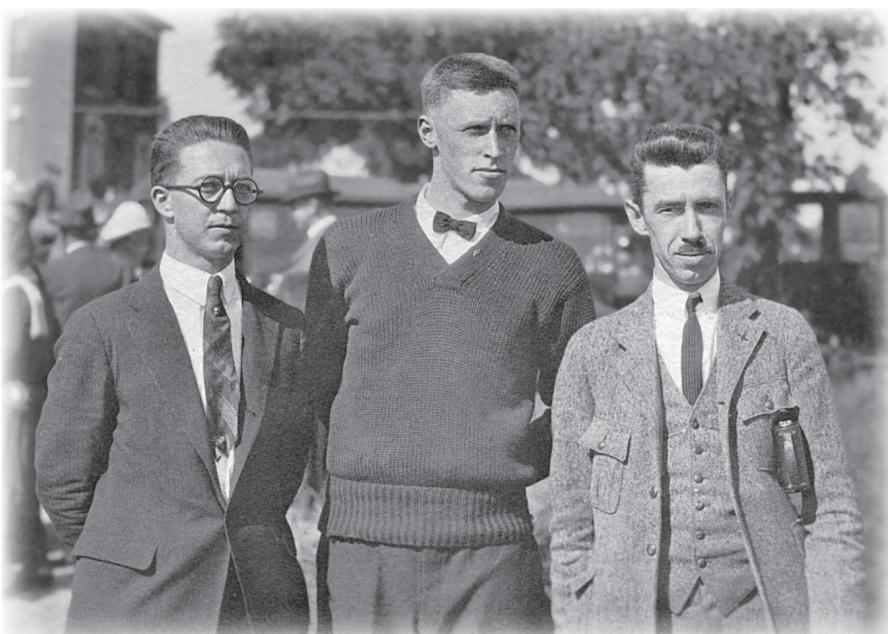
Amateur in the Arctic

Dr. Donald B. MacMillan had experienced eight previous trips to the Arctic, and recognized the value of two-way wireless communication. His two previous journeys had been equipped with conventional long wave transmitters, which were unable to penetrate the screen of the aurora borealis. MacMillan turned to the American Radio Relay League for assistance in outfitting his expedition with better wireless communications — and it was enthusiastically provided. Hiram Percy Maxim and the Board agreed to furnish support as well as recruit an expert operator to accompany the expedition. Donald H. Mix, 1TS, of Bristol, Connecticut was chosen for the task.

The radio equipment used by the expedition was specially designed by League Board member M.B. West and constructed by amateurs at his firm, Zenith Electronics, then an American manufacturing company. The transmitter emitted on 185, 220, and 300 meters — medium wave frequencies — with a total input power to two Western Electric "G" tubes of 100 W. The station aboard the ship was given the call WNP — Wireless North Pole.

WNP transmitted weekly 500-word press releases and listings of stations worked and heard. Once received by amateur stations, these reports were delivered to local affiliated newspapers of the North American Newspaper Alliance; from there, they were distributed syndicate-wide by telegraph. Amateur stations confirmed this delivery with the League, which had published detailed directions for this process in *QST*.

See the sidebar "From the Arctic" for an



Posing before saying *bon voyage*, from left to right: F.H. Schnell, 1MO; Don H. Mix, 1TS, expedition WNP operator, K.B. Warner, 9JT.

From the Arctic

Radio amateur Donald H. Mix, 1TS, was selected to accompany Donald MacMillan's 1923 expedition to the Arctic. Mix's letter to the ARRL, excerpted here, was published in the October 1923 issue of QST.

Godthaab, Greenland, July 28, 1923

As I have written before, our nights now are exceedingly short and have been decreasing in length all the time until now we have only a couple hours of semi-darkness. For this reason I have picked the stations which were most consistent and who are copying WNP most consistently to shoot the press to, rather than fool around trying to put the MSG over the greatest distance possible and wasting the little period of radio night we now have. As it is, it has been no easy job to get the code MSG off and I think we have been exceedingly fortunate to get it cleared as we have during this kind of weather. Infinite credit should be given to 1ZE and 1ANA for their splendid work.

Have tried to give several other ones and twos a chance at the code msg but after wasting the whole night have had to QSK with only a small part received OK, and have had to wait until the next night to clear it thru 1ZE or 1ANA. Aside from getting the code message off, have had practically no other time to put in at the set as am on watch 12 hours out of every 24. I have managed to get a few minutes now and then, but have logged but few threes or eights and have heard none of them calling us.

Since the set was installed in Southport, I cannot remember a single night which was free from bad QRN. Just before going on watch before 11 P.M. on the 26th, I put on the fones for a minute and was surprised to find that QRN was only moderate and just had time to tune in old 8ZZ, who came in fine. As soon as my trick at the wheel was

over, I sneaked down and started listening at 1 A.M. (26th) and within the next forty minutes logged 5AGJ, several eights and several nines. They certainly sounded good. Signals were all swinging violently, however, as quite a sea was running and the *Bowdoin* was rolling all over. We were about 200 miles west of Cape Farewell then.

The next night I listened for about 5 minutes and logged 3TB and 9APE. Set didn't sound just right and then I remembered that the antenna was not connected on the outside. At 12:35 A.M. I got another chance to go below and in a quick succession logged 9CVC, 9AAU, 9AXU, 9AVZ, 9DFW, 9AAW, 9DCT, 9AWG, Can. 3XN, 8GT, Can. 9BC, 9BUN, 9MF, and Can. 3DS, without any ones, twos, or threes in between. At 1:22 heard 6PL call 9BUN but couldn't believe it so did not log him. 1:23, 9CGA called 9BBB and at 1:25 heard 6CMR plainly signing off and at a minute later 6PL signing off again...The harbor master here tells us that the Danish battleships which visit Godthaab can hear nothing on account of the solid wall of rock hundreds of feet high surrounding us. During the last couple of nights when I was hearing DX well, I called several of them but could raise no one.

Am enclosing a list of calls heard. We are leaving early tomorrow morning for Sukkertoppen. Everything going fine. Had fine trip across from Labrador to Greenland. Mac is enthusiastic over results of few nights and needless to say, I am too. They certainly are most encouraging and indicate that things will go through with the usual A.R.R.L. bang next winter. Tell the fellows out west not to worry and that I am straining my ears for every one of them and will work them if they can hear us.

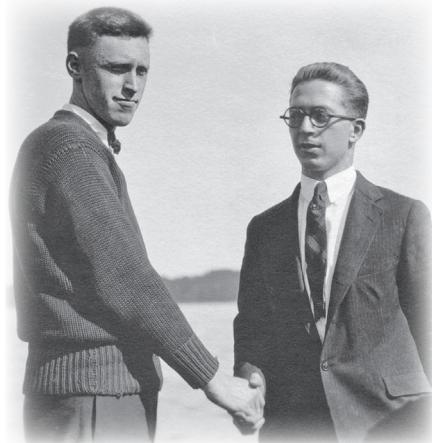
Best 73s to everyone. Remember me to Ken.
As ever, Mix

excerpt from a letter that Donald H. Mix sent to the League, which appeared in the October 1923 issue of *QST*.

MacMillan, 1925

MacMillan's subsequent attempt at the North Pole centered around wireless. The objectives supported by the Navy and the National Geographic Society were to deter-

mine the full capabilities of radio north of the auroral belt and to explore the northern reaches by air. In the summer of 1925 the *Bowdoin*, captained by MacMillan led the *Peary*, a minesweeper enlisted as transport and captained by Zenith president Eugene F. McDonald, to a bay again near Etah in northern Greenland. Three amphibious



F.H. Schnell, 1MO (right), wishes D.H. Mix, 1TS (left), a good voyage.

Table 1
Notable Radio Equipped Expeditions, 1924 – 1937

Date	Name	Region	Method	Call
1924-1925	C.G.S. Arctic	Newfoundland	Vessel	VDM
1925	Norwegian Ross Sea Whaling	Antarctic	Vessel	AQE
1925	Macmillan/Byrd	Arctic	Vessel	WNP, WAP
1926	Detroit Arctic	Arctic	Air	7BU, 7UU
1926	Byrd Arctic	Arctic	Vessel/Air	KEGH, KNN
1926-1936	American Museum Greenland	Arctic	Vessel	VOQ
1926	Savoy Geographic	Sahara Desert	Vehicle	ANK
1926	Roosevelt Memorial	Brazil	Vessel	GMD, 2GYA
1926	Forbes-Leith Persian	Middle East	Land	FLP
1927	Putnam Baffin Island	Arctic	Vessel	VOQ
1927	Marshall Field	Alaska	Land	WMBE
1927	C.G.S.'S Stanley & Latch	Arctic	Vessel	VDE
1928	American Brazilian	Brazil	River	PUT
1928	Borden-Field Museum	Arctic	Vessel	KGEG
1928	Stoll-Mccraken	Arctic	Vessel	VOQ
1929	Italian Arctic	Nova Zembla Isle	Vessel	LDIV
1929	All American Lyric Malaysian	Borneo	Land	PMZ
1929	Oxford University Exploration	British Guiana	River	VP5OUX
1929	Metro-Goldwyn-Mayer-Trader Horn	East Africa	Land	W6OJ, FK5CR
1930	International Pacific Highway	Mexico	Vehicle	IPH
1930	Wilkens-Ellsworth Submarine	Antarctica	Vessel	WSEA
1930	Second Roumanian Arctic	Greenland	Land	XORC
1931	Haardt Trans-Asia	Asia	Vehicle	FPCF
1931	Sikorsky Pan American	Brazil	Air	PY--
1932	Lamb Expedition	Tibet	Land	AC4UU
1933	Riser Larsen Expedition	Antarctica	Vessel	IMZ
1933	University Of Michigan	Greenland	Land	NX1XL
1934	Round The World Flight	World	Air	KHMZA
1935	Dr. Dana Coman Scientific	South Seas	Vessel	WOFV
1935	Hammond Research	Venezuela	Vessel	XW4PDA
1936	American Museum Of Natural History	New Guinea	Vessel/Air	W2IVN
1936	Andes-Amazon	Peru-Chile	Land	HCAAE
1937	Terry Holden British Guiana	British Guiana	River	VP3THE

aircraft were assembled on site and directed by Richard E. Byrd. Severely limited by weather and mechanical problems, the aircraft only accomplished some seven missions within their limited range, and did not actually fly over the pole. The outstanding accomplishment of the expedition was in the sphere of radio. Utilizing short waves, the expedition was in consistent contact with the outside world throughout the journey, to the delight of the amateurs who were able to work them. The phenomenal success proved to the Navy that short waves were definitely superior to the long and ultra long waves on which the fleets had been relying.

World Exploration

The aid provided by Amateur Radio was not solely confined to the explorations of the polar regions. Table 1 is a list of notable radio equipped expeditions, which shows the broad scope and diversity of amateur involvement in scientific expeditions.

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