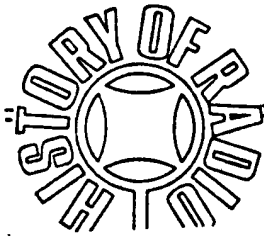


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Fred Link & Al Gross

By Pete Bowles

Their inventions tipped the scales in World War II; and without them, there would be no CB radio

Editor's Note: As part of its commemoration of Citizen Band Radio's 20th Anniversary, CB MAGAZINE concludes its series of vignettes on the pioneers who developed radio. The author is a distinguished investigative reporter, and was a member of a team of writers which was awarded a Pulitzer prize for work in uncovering the trail of drugs smuggled into the United States from Europe, South America and Mexico. Beginning in 1979, a new series will begin on those who took the basic inventions and revolutionized Western civilization.

Two men who played major roles in establishing workable radio systems for America's armed forces during World War II also were pioneering contributors to the phenomenon now known as citizens band radio.

The two are Fred M. Link, 74, the father of two-way mobile communications, and Al Gross, 60, who was granted the Federal Communications Commission's first certificate of approval for a citizens band radio transceiver in 1948 — ten years before the establishment of the Class D citizens band radio service we have today. Link, who began supplying two-way radios to police departments on the East Coast as early as 1932, was responsible for outfitting the Army with two-way radios for tank use shortly before the outbreak of World War II. Gross, who designed a high-frequency walkie-talkie in 1939, helped the Office of Strategic Services set up a radio system for counterintelligence activity in the early days of the war.

Both began their radio pioneering careers as amateur radio operators.

Gross, a resident of Cleveland, Ohio, was introduced to radio in 1927 — at the age of nine — on a steamboat trip with his parents across Lake Erie to Buffalo. "Like all kids, I was restless; and during the all-day trip I wandered up to the top deck where I discovered a room full of strange, humming equipment and a man tapping out something on a telegraph key," he recalled in an interview. "It was the

ship's radio room; and the brass pounder, as they called radio operators, took me in and gave me a complete tour, even got me some lunch. From that moment I was a captive in the wonderful world of radio."

The wartime activity of Al Gross, who calls himself the first CBer, was a bit more surreptitious. With the outbreak of the war, he was called to Washington to discuss the possible development for military purposes of the handheld unit he had built in 1939. His small — 1½ by 2¼ by 8 inches — walkie-talkie seemed ideal for the clandestine work of the Office of Strategic Services, predecessor of the Central Intelligence Agency. Under the wing of the OSS, Gross helped design the highly secretive "Joan-Eleanor" system that allowed an agent on the ground to conceal a tiny transceiver for contact with a plane that copied ultra-high frequency voice transmissions on a wire recorder while retransmitting them overseas. The Joan-Eleanor system (Joan was the code name for the airplane radio, Eleanor for the ground radio) was considered one of the most spectacular radio developments of the war.

TREMENDOUS THING

In 1944, Gross was invited to a meeting of the FCC to demonstrate his hand-held radios and to discuss the possible development of a citizens radio communications service. "It was going to be a personal, two-way radio," said Gross, "and even then we realized what a tremendous thing this could be." This was probably the first discussion of what is now known as citizens band radio. As a result of the meeting, FCC Commissioner E.K. Jett wrote an article for the Saturday Evening Post in 1945 describing the postwar possibilities of a civilian radio system. "From mere listeners or spectators, as they are now, people in homes and offices throughout the country will become active participants," said Jett. The commissioner said the potential for the



Al Gross is shown in a 1949 newspaper photo demonstrating his 12-ounce CB — a cousin to the unit he developed for OSS agents behind enemy lines.

civilian radio was limitless and would undoubtedly bring American citizens — both in the cities and in the country — closer together. He also predicted the emergency applications of such a system. "When storms, floods, earthquakes or other disasters after the war disrupt wires, families and communities will nevertheless remain in touch with the outside world," wrote Jett.

Gross returned to Cleveland and set up the Citizens Radio Corp. in 1945, and for three years tested his citizen radios in every possible circumstance. On March 22, 1948, the FCC granted Gross the first certificate of approval for a radio transceiver to operate on the frequency of 465 megacycles. The FCC said the 2½-pound, battery-operated set represented "the advent of a new service which will be available to individual citizens for personal use in the band 460-470 megahertz."

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The Commission also said it had under consideration the establishment of additional rules which would provide for the "simplified licensing for operation by individuals," adding: "Within the limitations imposed by the physical laws governing propagation of radio energy and the economic factors involved, the possible uses of this service are as broad as the imagination of the public and the ingenuity of equipment manufacturers can devise."

"CB NUMBER ONE"

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 With the license as proof, Gross calls himself "CB Number One." "I was the first manufacturer of CB, so

who else could be the first CBer but the guy who made the equipment," said Gross. One of his first orders was for 25,000 walkie-talkies for Montgomery Ward at a cost of \$75 each. Shortly thereafter, the Coast Guard gave him a contract for hand-held sets that could be used for ship-to-shore application.

DICK TRACY RADIO

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 One of Gross's radio ideas ended up in the comics. He had designed a one-way radio that fitted into a wrist-watch case. About the same time, Chester Gould, creator of "Dick Tracy," paid Gross a visit, presumably to investigate the possibility of outfitting the sharp-faced detective with a walkie-talkie. Instead, Gould saw the wrist radio and decided, for comic strip purposes, to make it two-way. In October 1948, Tracy was seen for the first time wearing his now-famous two-way wristwatch radio.

Gross sold his company in 1949 — well before the establishment in 1958 of a Class D license more easily available to citizen radio operators and the later big boom in CB.

FOOTBALL HELMET

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 Gross has continued to invent a number of gadgets through the years, including the first pocket-radio paging device and the first battery-powered calculator. But one of his most novel was probably the helmet radio similar to the one now used by military pilots. In 1952, he said the Cleveland Browns football team asked him if he could design a radio helmet which would allow quarterback Otto Graham to receive plays from the sidelines. Using the induction radio system invented by Nathan Stubblefield in 1892 (see CB Magazine, April 1978), Gross installed a big loop around the Cleveland stadium and installed a small receiver in Graham's helmet. From the press box, spotters were able to transmit plays to Graham on the playing field. The helmet radio was banned by the National Football League after one season.

Gross, who now works for a Cleveland company that manufactures CB antennas, still is fascinated with the growth of the citizens communications service he and the FCC envisioned in 1945. "There is no doubt that CB has brought people closer together," he said. "This wild world of CB is the only place I know where a person's race, sex or politics has no place. It is being used as we intended . . . to help people, help keep them in touch. It's so popular, it's unreal."