

## Lee Faber, W7EH...Radio Pioneer

by Barry Wiseman, N6CSW/Ø  
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Lee Faber was born in Paw Paw, Illinois, on February 2, 1900. Today, over 92 years later, he can look back over almost the entire history of radio. He was first licensed as 9EH in 1917, and is still active today as W7EH. He started with 'spark', saw the development of vacuum tube technology, and today operates entirely 'solid-state'.

Other interesting facets of his life: he was a great builder - about 10 big transmitters; he attended the first ARRL Convention in 1921; he started grinding crystals around 1932 and later started the James Knights Company; and he had at one time the largest (or tallest) ham antenna in the world.

I was introduced to Lee by his good friend Bob Samuelson ["Recollections of a Radio Engineer", ER #8 and #11]. After a couple of telephone conversations, I decided to visit Lee. That summer (1989) he was staying up in the White Mountains at Show Low, Arizona, where he said it was cooler and he was more comfortable than at his home in Phoenix. Show Low is about 250 miles from Durango. I left about 7 in the morning and arrived in Show Low around noon.

Lee was outside when I pulled up to his trailer in an RV campsite outside of Show Low. He was dressed casually in trousers with suspenders, a plaid shirt, and a British style cap that looked to be from the '20's or '30's. He was a small man, somewhat shrunken with age, but ramrod straight, and he looked to be in good physical condition. When I got up close I noticed that he had one glass eye. He told me later that he had lost the eye back in the '20's when a battery exploded. His face

was that of a much younger man. I thought then that most people would guess his age at somewhere in the '70's rather than the '90's.

We shook hands, he asked me about my trip, and we went toward his trailer. It was small - about 25 feet long- and set on a concrete slab a little longer than the trailer and about as twice as wide. There was a metal storage shed to one side and a table with two chairs under a canopy by the door. In contrast to the neighboring RV's and trailers, Lee's area was totally devoid of anything superfluous, like the usual brick-a-brac, plastic or plaster ornaments, tools, bicycles, etc.

The inside of the trailer was neat and orderly as well. Lee told me that he had just 'restored' this trailer. It was a Royal Coachman which he said was the 'Rolls Royces' of trailers. I was impressed with the orderliness and good housekeeping I saw and I mentioned this to Lee. He said that this was how he had been brought up. The only piece of radio gear in sight was a 2-meter transceiver on an end table by the couch.

After I'd cleaned up in the bathroom (again I was impressed) and after Lee had offered me lunch (I declined as I had eaten on the road about an hour earlier) we went outside and sat at the table under the canopy.

At first Lee wanted to talk about the magazine. Although he liked ER he seemed to be very skeptical about my chances of success. "I like the magazine, he said, but how many people are going to buy it? Do you think there are enough hams out there who give a damn about the old days?" I tried to assure him that there was a market for a magazine like mine although after only 6 issues I wasn't that sure myself. I moved the subject over to radio as quickly as I could.

My first questions were about the 'real early days' when he started operating with spark. How did a spark transmitter work? What did he use for a receiver? How many hams were on the air back then? What I really wanted to find out was just what it was like back at the beginning. Lee had detailed answers to all my questions and the afternoon passed quickly. I was very impressed with the way he could recall dates and details. I had expected him to be sort of slow and rheumy and hazy in his recollections as most men of his age would be but Lee is as bright and sharp now as he ever was. He never smoked or drank excessively; maybe that's been a factor in his preservation. I remember thinking how I wished I could be like him when I was old.

It was getting on to the time that I should leave as I wanted to make it home that evening. Lee said he had some photos and stuff in the shed that I might be interested in. He hauled out two large cardboard boxes, two smaller ones, and a large tin filing box. The large cardboard boxes contained six albums; the smaller ones old magazines, letters, two VHS tapes - one made from a 16 mm film on the erection of his 125' tower, another from a film on the James Knights Co. The tin filing box was stuffed full of QSL cards - about 5,000 I was to learn later - going right back to the beginning. The albums were neatly put together with everything arranged chronologically. The photos - which were surprisingly good as family albums go - were interspersed with yellowed newspaper clippings and other paper memorabilia. His logbook was there too (hardbound!), with the first entry being made in 1922.

I became totally absorbed going through this 'archive' of material. I had never, ever, seen anything like it. This man had his whole life chronicled. It was all there. As the afternoon wore on and as the shadows lengthened I was thinking about how I'd have to come back another day to get through all the material. As if sensing my thoughts, Lee said, "Why don't we load

this stuff up in your car. You can take it home and go through it." I was shocked, how could he trust me with this treasure that he had put together so lovingly over the years? "It'll be alright he said, don't worry about it."

Almost three years have passed since that first meeting. I still have Lee's archives here and Lee still isn't worried about them. I've attempted to get an article together on Lee but for one reason or another it just didn't happen. We've talked many times - he's one of my references for information - and I think we've become good friends. I think that in retrospect I'm better prepared to document his life now than I would have been back soon after I met him.

### Part One

Lee was always interested in things technical. So much so that the people in his town thought him slightly odd and he remembers being referred to as "Bart Faber's Crazy Kid". Bart Faber was his father and he operated a meatmarket or 'butchershop'. Lee remembers that he once repaired the freezer at the meatmarket, which incidentally was one of the first in the area.

### How did he get involved in radio?

In Lee's words: "About 1913 I became acquainted with a young girl. I had found out that girls were different from boys about that time and the love affair got me involved with wireless telegraphy or ham radio as it was to become known as. This girl told me that her brother had something up in the attic that made a lot of noise and smelled like burned hair. I had to investigate so I went down to Earlville, which was about 8 miles away. There were no cars and I had a horse that I rode to go see a girlfriend, but 8 miles was too far to go on a horse, so I rode the caboos on a freight train down there. I heard my first wireless signal that afternoon. I think that was in 1912 or '13. And I also met Arthur Schneider, who became a good friend and mentor as you might say. The gear he had was very primitive; the sim-

plest spark transmitter, a crystal receiver, and a long-wire antenna. But I was impressed. To me this was the most exciting thing that I'd ever experienced.

### **Where did he start?**

I knew the first thing I had to do was get a receiver working and then learn the code. Art Schneider showed me how to put together a crude crystal set and I put up an antenna. It was interesting that at about that time the Illinois Watch Company at Springfield, Illinois, which was about 50 miles from my home in Paw Paw, started sending spark code signals every noon for an hour. Somebody there on their lunch hour thought they would teach people the code and encourage them to become wireless operators. So they started sending code for 15 minutes at 5 wpm and then 15 minutes at 6 or 7 wpm and then the rest of the hour at about 10 wpm. I learned the code from that. In order to get your license you had to swear that you could copy 5 wpm.

### **On the Air**

"In the beginning we just worked across town or a mile or two. I got a friend involved with me. He was about my age, his name was Stanley Thorpe. I helped him build a spark transmitter using a Ford spark coil and a crystal receiver. We'd talk back and forth by code.

"I remember one winter evening I was working Stanley when my Dad came up into my room wondering about all the noise I was making. The spark transmitters - even small ones - made an awful lot of noise. I could best describe it as a squeal or rushing noise. Anyway, my Dad asked me what I was doing. I said that I was talking to Stanley Thorpe. He said, 'Come now, don't tell the neighbors, they'll think you're crazy.'

"Well I am, I'm talking to him and would you believe it (we didn't even have a telephone then) if Stanley came over here in the next few minutes? Would you believe that I talked to him and sent him a message? He said, 'Yes, I would'. So I got on the key and told Stanley to come over

because I wanted to prove to my Dad that I was talking to him. So Stanley came over and came in the kitchen door and there we were. We had at last proved to someone that we could communicate by wireless telegraphy. My Dad was not encouraging at all. He thought we were not playing with a full deck. Something like that.

"The call I got in 1917, 9EH, was almost all dots and when Stanley Thorpe got his about the same time, 9JM, it was nearly all dashes. We always marvelled about that; how I got all the dots and he got all the dashes.

"The first transmitter that I got on the air consisted of a Ford spark coil energized by a 6-volt storage battery. The spark gap itself was made of 2 binding posts with 2 pieces of pointed wire under the binding posts. The spark jumped between the two points. In parallel with that we had a plate glass condenser. This condenser was just a couple of pieces of plate glass with wrinkle tin foil in between. In those days they wrapped cigars in foil. I don't know for sure that it was tin foil but I think that aluminum came along much later. The plate glass condenser was connected across several turns - maybe 8 or 10 - of a coil made from quarter inch tubing. The coil was about 2 or 3 inches in diameter. This completed the tuned circuit. You could adjust the condenser and get the color of spark you wanted. I think a pretty blue color was what you were shooting for. When the spark jumped you could smell the ozone in the air.

"You keyed the transmitter in the primary (battery) circuit. We soldered two dimes on the contacts of the telegraph key in order to carry the current. Dimes were silver back then. The ordinary brass contacts would oxidize and finally the contacts would just stick together.

"The old single-cell dry cell telephone batteries that we used had nice brass nuts and bolts. We used those for nearly everything including switch contacts. Insulating material was also hard to come by. There was one product that was available

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-I think it was Formica - but it was very expensive and hard to find. I remember using glass for insulating material. I would drill holes in the glass using turpentine and an ordinary twist drill turned by hand very slowly. Sometimes I would spend 30 minutes to an hour getting a hole through a piece of glass and then when I wanted to cut it to size it would break and I'd have to start all over again. Fortunately, time was no object in those days.

"You would couple the antenna - that was always just one wire - to a coil of two or three turns. One end of the coil would go to a ground or a wire leading to a ground. Since we were on the second floor with some of the early experiments, the ground wire was as long as the antenna so it amounted to a dipole with one end of the dipole grounded, apparently. But it still put out signals because every time you'd shock that tuned circuit and the antenna with a spark, a signal would be transmitted in the air and be received someplace, sometime.

"The receiver was a loose coupler, which consisted of two coils wound with double silk wire. I don't know why, but plans always specified "double silk wire" in any article you could find to read. The articles were very scarce and far between. One coil slid inside the other - that's why they called it a loose coupler. The outside coil was tapped every few turns and ran to a tapped switch that was homemade, of course. The loose coupler then was in turn connected to a crystal detector either of silicon or a piece of galena. And you'd use a cat-whisker, which was a sharp pointed piece of copper wire, very fine like 22 or 30 so it would not put much pressure on the detector. You'd hunt around with that piece of wire until you found a place where you could receive a signal.

"The signal you used on your test was from an ordinary door bell buzzer with the bell removed. You pushed the button and the thing would buzz and it would

send out radio signals in the room. You would adjust the sensitivity of the crystal detector by the audibility of the signal from the buzzer. Nearly every time you'd transmit you'd lose the sensitivity. It apparently would arc in the receiver circuit because of the proximity of the transmitter. Then you'd have to reset the detector before you could begin to hear the incoming signals. How we found the frequency of the other fella Lord only knows, I don't. You'd have to tune the loose coupler, adjust the taps, slide the internal coil in and out and hunt and hunt very carefully and when you heard a weak signal you would have to make further adjustments very carefully.

"Now this is all about 1913 or 14 and about 1915 there were rumors that the power company was going to build a transmission line to Paw Paw, Illinois, so I began to gather up stuff that would work on 115 volts. Up to that time all we had was gaslighting in the house. I bought a Sayville rotary spark gap from W.B. Duck and Co. They were about the only company that put out a catalog then. I talked my Dad into letting me order a Navy type loose coupler for \$13 and that was very beautifully built, mahogany cabinet, shellacked coils; it just glistened. It had taps on both the secondary and the primary coils. It had a crystalloy detector. That crystalloy detector was a cylinder filled with silver filings. At one end was a crystal cemented in with woods metal. As you would rotate that cylinder those silver filings would finally come on to a sensitive spot - a spot on the crystal that would rectify the incoming signals.

"We got alternating current in 1917. I had all this equipment ready to go and I remember turning it on for the first time. I used a Thordarson 1-KW transformer and the crashing noise brought my mother and father to the upstairs bedroom in a hurry. You could hear the crashing of the spark all over the neighborhood. And this new setup really created the ozone." ER  
Part two next month.

# Lee Faber, W7EH...Radio Pioneer

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We finished up Part One last month just as Lee was getting on the air with his first rotary spark gap transmitter in 1917.

## Part Two

To further quote Lee:

"The rotary spark gap was very much superior to my previous transmitter. Its operation was quite interesting. The rotor was fastened to the shaft of a motor and all around the rotor - from the center out were bolted strips of copper on an insulating disc, twelve strips to be exact. On opposite sides of the rotary wheel were what we called fixed electrodes. When the rotary wheel was rotated the spark would jump between the fixed electrodes and the rotating electrodes and if you used a synchronous motor - one that ran in a multiple of 60 cycles like 1800 RPM - you could adjust the position of the fixed electrode so that you'd get what we'd call a synchronous spark and it sounded like a real powerful 120 cycle tone!

"Later we created quite a sensation by driving the rotary spark gap with a round sewing machine belt. We put about 4 inches of metal door spring in the belt. As the belt would go around the pulley it would slip and we had a 'Wow, Wow, Wow' effect. For a long time 9EH was famous for that particular tone. I wouldn't tell anyone how I did it because then someone else would copy it.

## What Stations Did He work Back Then?

"I worked mostly 8's and 9's back then as I recall; not very much DX, although I did receive a report from a ship off the coast of South America that I had been heard. I figured the distance out at 1800 miles. That was the best I ever did during that period as far as I know."

## A Description of Lee's Station In 1917

An article in the "Lee County Times", a local newspaper, had this write-up:

"Considerable interest is being taken in wireless telegraphy all over the country by young boys and several here seem to be more or less interested. Leon Faber has had an outfit for some time and is adding improvements frequently. The young man is becoming quite proficient in the work and following is his description of the station:

"The station consists of a transmitting and receiving set. The transmitting set having a range of about 100 miles under good conditions and under the same conditions the receiving set can pick up messages within a radius of about 1200 miles. The transmitting set consists of a 1 KW Thordarson transformer which outputs over 10,000 volts, a Sayville rotary spark gap of about 4000 revolutions per minute, a condenser of the correct capacity, a Murdock oscillation transformer or tuning Helix, a Standard wireless key which has No. 6 coin silver contacts, and a meter to tell when the station is out-putting the maximum amount of energy. A Murdock double pole double throw switch is used to secure a quick and positive change from sending to receiving. When the blades of the switch are put in a downward position the rotary stops and the station is ready to receive. The receiving set consists of a Navy type receiving transformer or tuner, a type aa crystal detector and four mineral detectors, two Murdock fixed condensers, a variable condenser, a 3000 ohm headset made by a reliable firm, a constant amplitude buzzer and all necessary switches.

## Aerial and Ground Connections

"The aerial is composed of four No. 14 copper wires sixty feet high at one end and about forty at the other. It is about 85 feet



Lee's medal from the first ARRL convention in 1921 at Chicago. This medal was available to all 1200 hams who attended, for about a dollar, as Lee recalls.

long and the lead-in, composed of two No. 14 copper wires, is taken off about the center which makes it a type T aerial. The type T aerial is the most efficient of all the aeriels designed. The station is protected from lightning by a single pole double throw switch. When the blade is in an upward position it connects the aerial to the instruments and when it is in a downward position the aerial is connected to the ground by a No. 4 copper wire. The ground wire for the instruments is a No. 8 copper wire soldered to a water pipe which makes the best ground connection possible. The station is open to visitors at any time."

#### **During And After WW I**

Lee continues:

"A lot happened in 1917 other than getting my first ticket. I also got my High School diploma by default because I joined the Navy. I did not do one constructive thing by being in the Navy. I had a free ride all the way. I went to school and earned 12 credits at the University of Illinois in Mechanical Engineering because that was easier.

"We were all off the air during the War. All the hams had to send in a notarized statement saying that all their gear was all boxed up and nailed shut. I remember explaining it all to a fellow at our bank who notarized my statement.

"After the War, I got back on the air as soon as I could. I think it was 1919. My new call was 9AMK. At this time you had to renew your license every year. I forgot one year. I got involved with dating quite heavily and I forgot to renew 9AMK and was given W9DAX, which I kept up into the fifties I think. Incidentally, I was on the air illegally for a couple of years between the time my 9AMK expired and the time I became aware of it.

"For a while I worked for a man named Frank C. Lenihan, who owned an electrical appliance store and there sure weren't many of those back then. I started building broadcast receivers for him and he sold a few of them. I had built a radio controlled submarine during the war which was on display in his streetfront window. He set fire to his building one night and burned everything.

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I lost the submarine and all my tools and everything else. He collected a substantial amount of money from insurance but I never got anything out of it. I remember we scrounged through the rubbish in the basement where everything wound up and we found two Magnavox loudspeakers that were salvageable. The insurance adjuster found out that we had taken them and made us give them back. So I lost everything. And times were very hard then. This was during the depression of '20-'21.

"About this time I remember listening to programs from WWJ which was in Detroit. And KDKA of course, located in a small town in northern Illinois. Later it moved to Pittsburgh.

"After that I got a job servicing windmills. I did the climbing of the windmills, replacing gears and fans and that sort of thing. One day the fella I worked for dropped a wrench on my head and it cut a hole in my cap and the skin on my head and the blood ran down over my face and I said, 'That's it, I'm going home', and I walked home and I never went up a windmill after that. I then got a job painting barns and farm buildings but I got pretty provoked over that too and I quit.

#### **The First Vacuum Tube Gear**

"Also about this time I went to a tube-type CW transmitter. This consisted of 210 in a Hartley oscillator circuit. Later that year we changed that to a tuned grid tuned plated circuit. And then I changed the tube to a 203A which had about 50 watts of plate dissipation. But I still used the rotary spark as well.

"I also got a tube type receiver. It was a CRL Paragon made by Zenith. I had to build my own amplifier for it. R.H.G. Mathews (9ZN) was the owner of the company. I think he started the Zenith Corp. and incidentally he was the first to put up a gold plated antenna. It was made of no. 12 copper wire, gold plated.

"A year or two after I purchased the Paragon, I acquired a Grebe CR-8 and used the same homebuilt amplifier with that. It was a much finer receiver than the Paragon.

"I can remember at this time that I used to come back from a date at 1:00 or so and then get on the air until about 4:00 in the morning or so. Dating didn't interfere with my ham radio activities."

#### **In 1921 Lee Attended The First ARRL Convention**

From *QST*, October, 1921:

"Oh, Boy, maybe our first national convention won't be remembered a while! Twelve hundred amateurs from out-of-town, representing every district and almost every state, augmented by several hundred local fellows; four big days so jammed full of amateur radio that nobody could keep up with it; fifty-odd exhibitors in a show so huge that one needed a week to do it justice; two big hotels full of bugs chewing the sock until break o' dawn every morning; so many records for attendance and representation broken, so many friendships made thru personal meetings, so much general good accomplished, that it is impossible to estimate it. These are just a few of the things about the A.R.R.L.'s First National Convention at Chicago, August 31 to September 3, that "stick out". It'll be a long long time before anybody who attended this meeting will forget it.

"At 10:30 on the morning of Wednesday, August 31st, Chairman R.H.G. Mathews called the opening session to order, and addresses of welcome were delivered by N.C. Bos, Chicago City Manager, on behalf of the local organization; Corporation Counsel Sawtelle, representing the mayor of Chicago; Coroner Peter M. Hoffman, speaking for Cook County; Chief Radio Inspector W.E. Ternell, spokesman for Secretary of Commerce Herbert Hoover; and Lieut. Parmeter, U.S.N., of "NAJ" representing the Navy Department. The main address was the formal opening of the convention by our president, Hiram Percy Maxim...."

And Lee still remembers it well: "It was a wonderful experience because I got to meet literally hundreds of hams and also a lot of hams I had worked over the years. And I got to see all that beautiful equipment that I couldn't afford. And of course they were

operating spark transmitters all day and the convention hall was filled with that sweet smell of ozone. Incidentally, this was as far away from home as I'd been in a while. Travelling back then was a big deal."

Recently, Lee received a plaque from ARRL in recognition of his over 70 years of membership. He has always been a strong supporter of that organization. In one of our early conversations I made some remarks critical of the ARRL and Lee became a little agitated, "You can gripe about ARRL all you want Barry, but just think where amateur radio would be without them", he said. I think Lee made a very good point.

#### **A Short Career As a Radio Op Aboard Ship**

Lee continues:

"In 1923 I received my Radio Operator First Class Commercial License. This was the highest license you could get at this time. In order to get the license I went to school at Dodge's Radio Institute in Valparaiso, Illinois, for about 6 months. I became personal friends with C.M. Dodge the owner of the institute. He gave me a card which stated that I could return to his school at any time for refresher courses; I never took advantage of his offer however. I went as a radio operator aboard the S.S. West Totant which was a grain ship sailing between the Gulf of Mexico and the Mediterranean Sea. I made one trip and was seasick for a month after I got off the ship so I quit. That spelled the end of my radio op days at sea.

#### **A Career With a Power Company**

"About this time a friend of mine who worked for the power company in Mendota, Illinois, about 20 miles from my home, found out that I was available and he knew that I was a ham radio operator and that I knew something about electricity so he called me and asked me if I would go to Earlville, 8 miles away and work for the power company - Illinois Northern Utility Co. - I stayed with them, finally becoming District Superintendent over about 10 towns some twenty years later."

#### **Lee's Logbook**

The only logbook in Lee's archives is a very deluxe hardbound volume. It's interesting that facing pages are used rather than a single page. The left page has the heading "Record of Transmission" and the right page has, "Record of Reception". His first entry was made July 23, 1922. At the top of the page under "Weather" he has indicated 'clear and warm'; 'QSS' - 'none'; 'QRM' - 'none'; 'QRN' - 'bd'. The station he worked at 1:00 PM was 9BUO who was using a spark transmitter. Under the heading Wave he indicates '200' (wavelength - 200 meters), and under Audibility he indicates 'B' which I would guess means 'bad'; under Character of Sigs he has 'Stdy' which is obviously 'steady'. I looked in a list of 'Q' signals to find what 'QSS' stood for but could not find it. Lee says it means fading. I wonder why that disappeared from the list of Q signals. On the "Record of Transmission" page he has 'spark' under the heading "Transmission" and 'sink' (synchronous) under the heading "Method"; under "Power" he has '500' and under "Remarks" '120 sink'. It's all very strange and different. That day he worked four stations.

Perusing further into the log, I noticed that his next entry was the following day, the 24th, when he logs 9 stations on the "Record of Reception Page" and nothing on the "Record of Transmission Page". He doesn't indicate transmitting until August the 11th when he worked 3 stations, all '9's. On Christmas day, 1925 he comments, "everything white with snow and a bright day - a duck and a chicken in the oven." That day he worked about 9 stations; starting at 9 AM and shutting down at 7:55 PM.

In 1925, I met the gal that was to become my wife. Her name was Ruth Mattick. She was a telephone operator. We were married on June 11, 1925. I might comment that she was a wonderful woman, very encouraging to me in everything I did or tried to do. ER

**Part Three next month**

# Lee Faber, W7EH...Radio Pioneer

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Last month part two of this series ended with Lee getting married in 1925.

## Part Three

To further quote Lee:

"Marriage and family life really agreed with me, my wife freed me up from all the housekeeping drudgery and things like that and kept me feeling good. She was also very encouraging and positive. I think I had more energy and ambition after I got married.

"As I recall, and maybe I'm wrong, ham radio really started to grow during this period. Tubes and parts were more available, information in the form of magazines and text books was more available, and ham radio was starting to get a lot of favorable mention in newspapers and magazines. All this contributed to the growth of ham radio. And people were really fascinated by radio communication. To most people it was almost magic. It seemed that young people, particularly boys, all wanted to get involved in radio.

"Even when the depression came along the interest in ham radio didn't seem to wain. I guess there were a lot of young people around with nothing to do and even though money was tight people improvised and got on the air or stayed on the air somehow. I was very fortunate in having a good job with the power company - I made \$120 a month throughout the depression - but with a growing family it was tough getting by. And I also had to support my mother and father, who had lost everything.

"My father had sold the meatmarket in 1921 and went into the cattle feeding business. That didn't prove too successful. Then someone talked him into mortgag-

ing several hundred acres of land in Illinois to buy a section of land out in South Dakota. And in South Dakota the tenants stole the crops and went into bad times. My father's finances started to fall apart. By 1932 or 33 he was totally broke. In ten years his entire fortune, which was \$75,000, was diminished. And \$75,000 in those days would be like a million today. You could say that he was trying to 'pyramid' his finances and got caught. I think that history is repeating itself and some people are going through the same thing today. During the '30's my father and mother came to live with Ruth and me. They were totally destitute. My father died in 1941.

"At this time my main interests in ham radio were in building bigger and better transmitters - always cannibalizing the previous set for the next one - and in getting up on the higher bands; first 80, then 40 and eventually up on 10. Needless to say, higher power and higher frequencies presented some challenges. However, 160-meters remained a favorite band."

In the January 1931 issue of QST there's a story "W9DAX, A Modern Station Specializing in 1750-kc. Phone Operation" W9DAX was the call assigned to Lee when he inadvertently let his previous call lapse.

They quoted Lee as saying, "The thrills with 1750-kc. phone are the best of all, because many fine contacts are possible and one can make very close friends."

"The station is located on the main floor of the house, with the permission of Mrs. W9DAX. The permission might not have been so readily forthcoming if the outfit were not characterized by the neatness which is apparent in the photograph. [photo facing page]



Lee, his daughter, Beverly, and wife, Ruth, about 1934.

"W9DAX consists of a crystal-controlled transmitter, using Heising modulation and a linear amplifier; power-supply equipment and other accessories; a superheterodyne receiver, and one or two other gadgets which, though not visible in the photo, are useful about the station. The transmitter is the feature of most interest, and will be taken up in some detail.

"The frame houses five separate units, each of which may be removed readily for repairs or changes. These are: The radio-frequency unit; the speech amplifier and modulator; the mercury-arc rectifier and keep-alive; the filter, and a control unit which contains the various relays for operating the set."

The RF portion of the set consists of a Type 10 oscillator, Type 10 buffer amplifier, Type 10 modulated amplifier and a Type 52 amplifier.

QST continues:

"The modulating portion of the outfit consists of a double-button microphone, three stages of speech amplification and two type '50 tubes in parallel used as modulators.

"The microphone is a Western Electric 389-W public address instrument and is capable of excellent reproduction.

"The receiver at W9DAX is a superheterodyne, using a regenerative first detector, oscillator, three stages of screen-grid intermediate-frequency amplification, second detector arranged for plate detection, and a single stage of audio-frequency amplification. The outfit is built from a factory kit made by Silver-Marshall.

"For monitoring transmissions an old broadcast crystal receiver is used. No trouble is experienced in getting enough pickup on

W9DAX's frequency to get a good check on the quality of modulation.

"The station has been heard regularly over a considerable area, and has been picked up in California - an excellent record considering the fact that comparatively few amateurs listen on this band. Since broadcast receivers have been made selective, interference difficulties have dropped off - in fact, W9DAX has never had a single complaint of interference. People even call up to compliment him on his outfit when they happen to pick it up!

"There are 285 perfectly good kilocycles in this band which should be a fertile field for 'phone men, especially. W9DAX says, 'come on up and see for yourself!'"

Lee continues:

"In the late '20's, I started working more and more DX, particularly on the higher bands. I remember I was one of the first stations to work Belgium on '40. As time went on it became almost routine to work DX but it was always a thrill.

"My first record of grinding crystals was in 1932. I worked a ham up in Sycamore, Illinois, 20 miles away and he was using a crystal. The tone and stability of his signal was just exceptional so I had to have one. So I order a piece of raw quartz from a company called "Electro Importing Company" in New York City. I paid \$3.95

for it when my wife needed a pair of shoes. Believe me, in '32 we had no money. A nickel ice cream cone on Saturday night was a treat. But anyway I ordered that quartz (pret-near getting a divorce in the meantime).

"I cut these crystals with a piece of metal and carborundum just by moving the metal back and forth like a saw until I wore a path thru the raw quartz. Then I ground the crystal flat by using the same carborundum on a piece of plate glass (on many pieces of plate glass because the glass wore out faster than the crystal.) I wound up getting a crystal to oscillate somewhere near the 160-meter band.

"It's interesting that in the first article on crystals that QST presented they got the information on the X and Y cut reversed. So when I thought I was making an X cut I was actually making a Y cut. Can you imagine that!

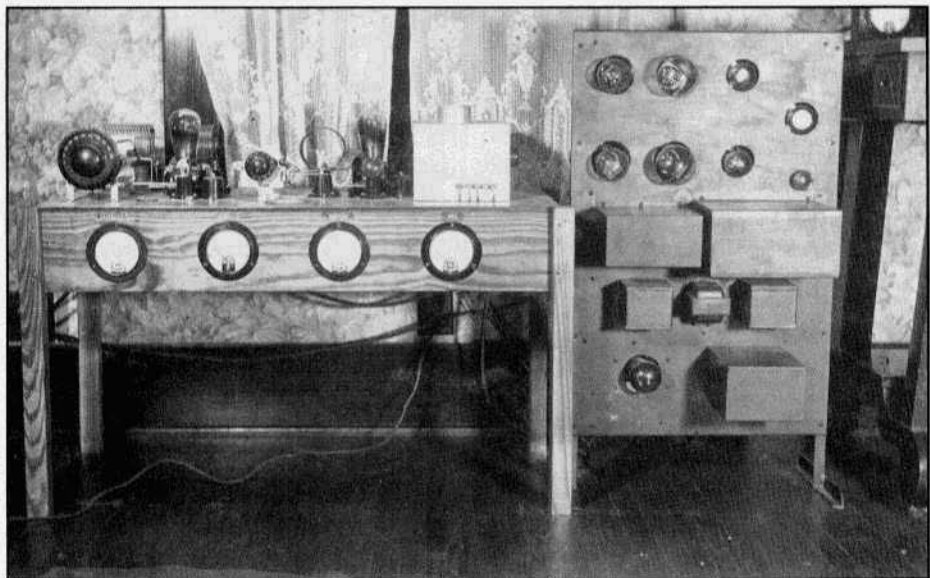
"The difference between and X and Y cut crystal is determined by the axis. A crystal has electrical, mechanical and optical axes. Well a Y cut is oriented from the crystal in relation to those three axes and an X cut is oriented at another angle. I think they're 60 degrees apart, I've forgot-

ten. A Y cut has much higher temperature coefficient. In later years I ground many Y cut crystals for temperature measuring equipment at the bottom of oil wells. We'd cut a crystal at a certain frequency and drop the equipment down into an oil well and you could tell the temperature at the bottom of the well by the frequency generated by the crystal.

"After I had cut some crystals and used them I was very impressed. I knew that crystals would play a big part in the future of radio and I thought there was going to be a lot of money to be made there. In 1932 or 33 I formed a company and called it Faberadio Electric Company. I have to mention that at that time and later I was always learning from others who were making crystals. I think that much of what I was doing then and even later was really following the work of others.

"At first I sold crystals to hams that I got together with at club meetings at Aurora, a large town about 20 miles from Sandwich. I remember I had a special deal for club members only; 25 cents per crystal, 5 cents down and 5 cents a club meeting. Remember this was the '30's and times

**continued on page 29**



**Another '150-meter' station about 1932**



## CRYSTAL HOLDER

THE FABERADIO ELECTRIC COMPANY has been in close contact with amateurs for many years. We know their needs. We offer for approval the type 36V variable air gap crystal holder.

When used with an active crystal, such as the "A" or the "V" on frequencies within 1000 KC above or below 4000 KC, the fundamental frequency variation will be approximately 6 KC. The frequency adjustment is made by turning the control knob.

When used with "A" or "V" crystals on frequencies within 300 KC above or below 2000 KC, the fundamental frequency variation will be approximately 2 KC.

Crystals one inch square are easily accommodated in this holder. Commercial stations can use this holder for precise frequency adjustments.



## CRYSTAL HOLDER

THE FABERADIO ELECTRIC COMPANY crystal holder is compact (1 3/4" wide and 3/8" thick), rugged and dust proof. The pressure of the top plate can be varied. The plates are lapped flat. The lower plate is exposed to radiate heat and helps to lower frequency drift when the crystal is worked at maximum output. The body is molded bakelite which is moisture proof, physically strong, and low loss electrically. It will not break if dropped. The color is mottled brown and black with a high lustre finish. The terminal pins are on 3/4" centers and by removing the terminal pin springs the holder will plug into a standard UY socket.

The design of this holder is ideal for the modern idea of stacking a number of crystals for frequency or band switching layouts. This holder will accommodate all crystals up to and including those one inch square.

Specify type 36 for frequencies below 5000 KC and type 36H for frequencies higher than 4999 KC.

## Two pages from an early Faberadio catalog describing a couple of Lee's best selling items.

were tough. I then came in contact with a man name Pat Paulson who was an engineer up at radio station WBBM in a Chicago suburb. He helped me make commercial sales to NBC, CBS and other big broadcasting outfits. At this time, in the early '30's, I think there may have been only a few other people grinding crystals. It was a new enterprise."

From the Sandwich Free Press, 1936:

"One day this week Leon Faber received an order to grind three crystals for the MacMillan expedition which leaves soon for the Arctic region. The order was received from Mr. Paulson, engineer in charge of building the radio equipment for the expedition.

"Since establishing this business Mr. Faber has supplied crystals to the National Broadcasting Company and Columbia Broadcasting company. He has also shipped crystals to China, Japan, Alaska, the Netherlands and Australia."

Lee continues:

"I was working as a Superintendent with the power company during the day and making crystals practically all night. I had a couple of part-time employees as well. It occurred to me that I needed a partner to help out so in 1936 I sold a half interest in Faberadio to Carleton Hough who also worked for the power company as a lineman. However, Carleton didn't like the idea of working 24 hours a day like I was doing. By mutual agreement I bought him out in 1938 and carried on alone in the business until 1942 when I formed the James Knight Company with James Knight as a partner. ER

**Part Four will appear next month**

**Editor's Note:**

In some future issue we'll have more on the mercury arc rectifier that Lee used with some of his earlier transmitters; it's a very intriguing devise.

## Lee Faber, W7EH...Radio Pioneer

by Barry Wiseman, N6CSW/Ø

4 Aspen Place  
Durango, CO 81301

### Part Four

#### Lee continues:

"Within days of the Pearl Harbor incident, I received a telegram from the War Production Board telling me that I had to supply them with a list of all the raw quartz, semifinished products and finished products I had on hand. This kind of scared me because I didn't think anyone in the government even knew I was in the business of making crystals. At that time it was just a sideline for me. And then a few days later Motorola sent a man out - his name was Elmer Wavering - to try to persuade me to get into crystal manufacturing in a big way. They needed thousands and thousands of crystals.

"Then I got another telegram from the War Production Board. They told me to come to Washington. When I got up there they said that they wanted me to go to work for Bendix Corporation in Baltimore in their crystal department that they were setting up for war production. I had a home and a family and I didn't want to move to Baltimore so after thinking about it a bit I said, "I'll go home and expand the crystal business that I have now". The man I was talking to at the War Production Board thought that would be all right, "But did I have the money to get started?" I replied that I didn't have much money and he said, "I'll give you a line of credit for \$250,000." I just about fell out of my chair; I'd never heard anyone ever talk about that much money. In a way it scared me; at that time I was making about \$125 a month. I went back to Sandwich without talking any more about the \$250,000.

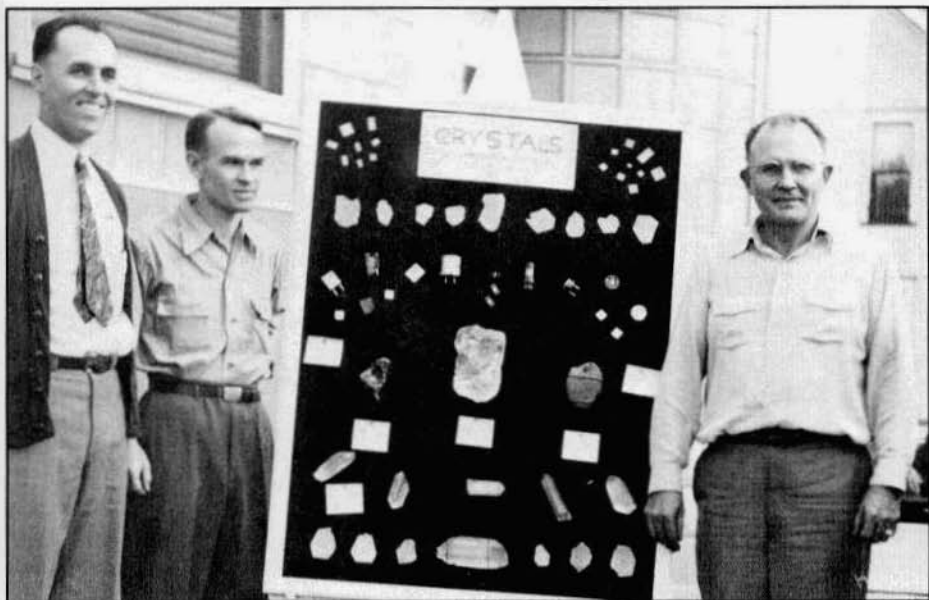
"I was really in a dilemma. On the one

hand I wanted to get involved - and probably would have to get involved - in some aspect of crystal production for the war effort, but I also didn't want to take a chance on losing what I had. I had a good job with the power company; by now I had been with them nearly 20 years and was a supervisor over about 5 or 6 towns. I was making \$125 a month and could look forward to a pension. I'd been through the depression and had a deep appreciation for security. And I also had to consider my family. Up to this point, I had provided them with a comfortable life and I wanted to continue doing so.

"When I got back to Sandwich, I went to see a friend of mine, James Knights; he was about my age and also a ham (9HMZ). He operated an electrical repair business. He fixed radios, automotive electrics and rebuilt batteries and that sort of thing. I told Jim what I was up against and asked him if I could start up my crystal business in the back of his shop. He said that I could, so he and I built a little room in one corner about 12 by 12 and I hauled in my equipment and started making crystals.

"As the business started to grow Jim started helping me. I was getting a little apprehensive about the power company finding out about my business so I asked Jim if we could put everything in his name. I'd just be helping him out; that would be the appearance of it at least. So that's the way the James Knights Company got started. Jim was an honest, hard working and reliable man.

"We didn't form a formal partnership until we had been working together for several months, and then it was only on the advise of our friends. One friend, who was the postmaster and also an accountant, advised us to set up an accounting system because he said the government



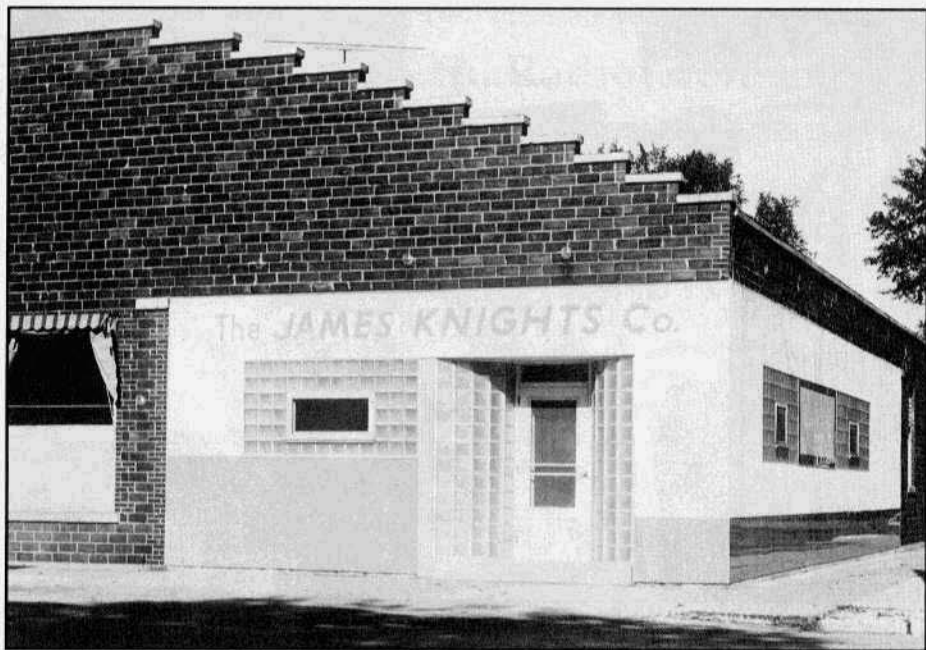
James Knights, Maurice Druesne (an engineer) and Lee in 1944. This photograph was taken in front of the James Knights' factory. The display contains crystals in various forms, from raw quartz to slabs to the finished product.

was going to require it. Another friend, who was a lawyer, advised us to set up a partnership or corporation. Neither Jim or I really knew anything about business at that time. Then we were advised to get some capital together to get the company going, so we both mortgaged the equity in our homes and came up with \$4000 each. You might say that the James Knights Company started with that \$8000. We never did take any of the credit offered to us by the War Production Board.

"We stayed in Jim's original building about a year. It was a tumble-down sort of building but we had a local contractor come in and kind of shore it up. When we outgrew that building we bought a much larger one across the street. We kept Jim's building as a machine shop. We were building most of our own machines - jigs, grinding tables, and special equipment - at that time. There was no other alternative. Later we bought a lot of machines and equipment from the Atlas Corporation. They started adapting things like

press drills for lapping machines and table saws to accommodate diamond wheels that we used to wafer mother quartz, etc. I think their main business was making tools and home workshop stuff for Sears.

"Our philosophy was always to do the best job that we could. We worked hard and put everything we had into the business. Jim and I both had ideas about how to make crystals better and more efficiently and we worked hard developing new products. But we also had some very sharp people working for us. I think we had around 10 engineers with us most of the time - some good, some bad. Most of them were just very smart, practical people; very, very few of them had formal educations in engineering. Most of them were also hams. I was always eager to hire hams because they came with a knowledge of what we were doing. One of the most important engineers we had was Robert Berge. He just died about 3 years ago. He was also a good friend of mine. Another good engineer was William Cotteu.



**The James Knights Co., Sandwich, Illinois**

"Then the money began to roll in. We were getting big prices for our crystals. We went from about ten or twelve employees at the beginning to around 300 at the peak, just before War's end. We were the largest employer in Sandwich, of course.

"The crystal business was very, very profitable. Selling to the government during the war was almost like a license to print money. There were some companies that maximized their profits by being less than honorable. For instance the government had set an upper limit of \$500,000 gross sales that a company could achieve before their contract had to be renegotiated. Most of the crystal companies stayed below that amount because the profits were enormous to begin with and they thought that they could do a half a million worth of business and come out at the end with a lot more money than by doing a million dollars worth of business and letting the government renegotiate their contract down to a point where maybe they'd make 10 or 12 per cent

profit. The year we were renegotiated they allowed us only 12-1/2 per cent.

"Another angle some of the companies played was running up their expenses because under the renegotiation regulations their profits were based on their cost. I guess I should have hired 25 janitors but I wasn't sharp enough to know that. I never hired any more people than I really needed. And our people were very, very productive. Where other companies had a lot of young people that had not developed good work habits, we had mostly older people who knew how to work.

"Another thing that we did that wasn't very profitable during the war was to get involved in very specialized crystals. The real money makers were the simple crystals like FT-243s and that sort of thing. But in retrospect I think the experience we gained in developing and manufacturing 'high-tech' products during the war really helped us survive after the war.

"When the war ended we just closed the plant. We didn't have orders to fill

**JAMES**  
*Crystals*  
**KNIGHTS**

Buy WAR BONDS for Victory

The **JAMES KNIGHTS Co.**  
 SANDWICH, ILLINOIS

**CRYSTALS FOR THE CRITICAL**

our suppliers and so on. I called up all the companies that we owed money to and reassured them that they would get their money, that eventually all our bills would be paid. I paid them all something on what we owed them every month. All my creditors, most of them suppliers, went along with me very willingly.

"If it weren't for the war I suppose I would have carried on making crystals part time and would never have gotten into it in a very big way. At the end of the war, there were some 70 large and small companies in the crystal business. Shortly after the armistice there were only 5 and I'm very proud that the James Knights company was one of

and there was nothing else we could do. Jim and I stayed on of course and some of our key employees. The total number, including Jim and me, was probably about 15.

"Although we were not broke, the James Knights Company was deeply in debt, most of our profits had gone to improving our plant. And at the end of the war the government reviewed our contracts and we had to repay them something on the order of a million dollars. We had to borrow most of that. Things were pretty tough immediately after the war. I remember that we could not pay our bills to

those. The challenge now was to survive in the business without the lucrative government contracts.

"I might mention that now that the war was over, I was back on the air and it was just great. Ham radio was always - and still is - a very important part of my life." **ER**

**Part Five next month**

## Lee Faber, W7EH...Radio Pioneer

by Barry Wiseman, N6CSW/Ø

4 Aspen Place  
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### Part Five

Lee continues:

To get the JK Company back on its feet we needed all the good fortune we could get. A lot of it came our way. I remember that the Motorola company - with whom we had established a very good relationship during the war - approached us in '46 or '47 with a proposition that was a big help to us. They wanted us to fill an order that none of the other companies wanted. They said if we would help them out they would help us build our business back up to a sizeable enterprise. I said that I'd sure do that; I'd do anything. They were good enough to advance us money for the bakelite moulding and ceramic parts that were needed to fill their order. They even sent a man out to the plant to get us started on this new design. They were awfully good to us.

"Another bit of good fortune came to us when a gentleman from Western Electric called and asked if we would be interested in some used crystal manufacturing machinery. I said that we would, but it would have to be awfully cheap. He said, "Would you pay for hauling it away?" The next day I went out to a plant they had near Chicago and got some of the most beautiful tooling that you can imagine. Overnight we had some of the best machinery and equipment that was ever made for crystal manufacturing.

"Another company that helped us a great deal was Collins Radio. I knew Art Collins very well and considered him a personal friend. I think that if we didn't supply all of the crystals he used we came very close to it. I had great admiration for

Art and the gear he manufactured. Starting with the 75A and 32V-1 in about '48 I bought everything he produced right up to the KW-1. Ted Hunter, an engineer at Collins, was another good friend. We used to make crystals for him to use in his design work.

"During those few years after the war I tried to sell crystals everywhere I could. Some of the companies became good customers while others got their crystals somewhere else. E.F. Johnson was a company that just bought a small amount from us during those years. Later when they got into the CB business they became a big customer. Hallicrafters was a small customer and didn't buy much from us, although Bill Halligan was a very good friend of mine. Heathkit bought a few, we used to manufacture crystals with their name on them; but Heathkit was extremely price conscience. Allied Radio was another customer but we didn't make a lot of profit with them because we had to dropship their orders. But they gave us exposure in their catalogs and we thought that was important. Phillips of Canada was a big customer. They used some in their manufacturing in Canada and sent a lot to their other plants in Europe. RME bought all their crystals from us. They weren't a real big outfit but every bit helped. We also supplied a lot of crystals to the broadcasting industry. Gates was a big customer, and of course Collins and also RCA to a certain extent.

"We sold a lot of special crystals that were used in lab equipment and such but I don't recall exactly whom they went to. I remember once we got a tremendous order from Bell Telephone for filter crystals. They came out to the plant and got us started. We had to solder two plates together side-by-side. When they were



James Knights and Lee Faber with the new company plane, a Navion, in 1946.

excited they generated a 4044 cycle tone. That kept us busy for months. Gradually the business was building back up. I think we probably added about 50 employees a year from war's end 'till 1950.

"In '46 we bought a Navion aircraft. I think we were the first crystal company to use an aircraft. It was a tremendous asset to us. The Navion cruised at about 150 MPH and I could fly it for about \$12 an hour, that worked out to about 10 cents a mile. I used to fly buyers and prospective customers out from Chicago to Sandwich and they were very impressed. Without the Navion or some other sort of plane we would have been at a distinct disadvantage being out in the boondocks as we were. I think I put about 2500 hours on that Navion, in the few years that we had it.

"While I was handling the business end of things, my partner, James Knight, was doing good work in running the plant and handling day to day operations. Although I was President of the company and Jim was Sect. Treasurer these titles didn't mean much. We always operated as partners and we each did what we could in every area.

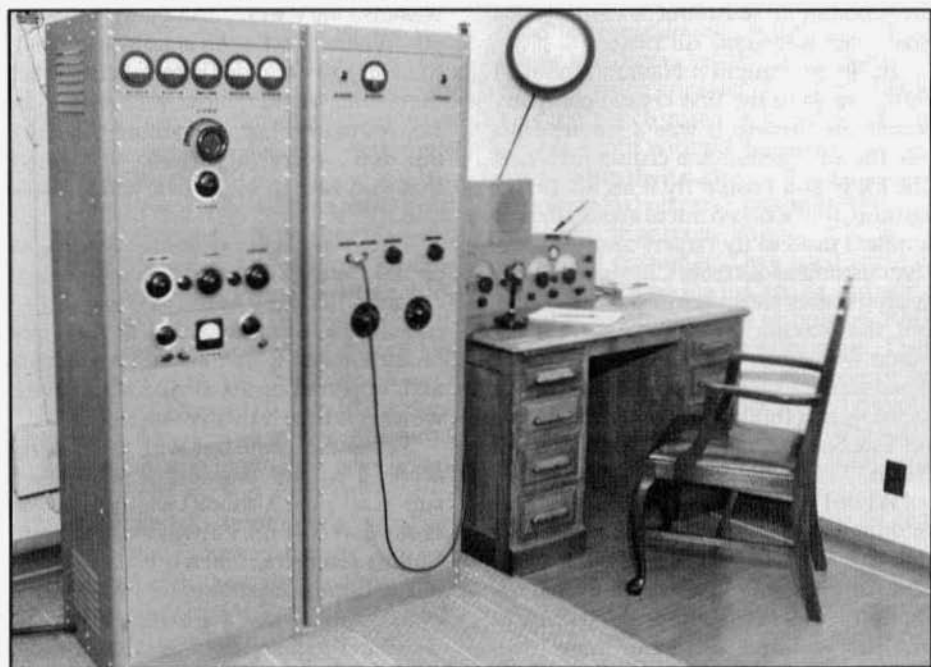
"Jim was really a great stabilizing influence on the plant. He was steady, reliable and always used good judgement. He was also very well liked by the employees. Where I was more action orientated, Jim was slow and deliberate. I remember that when we were faced with a problem he used to say, "Lee, everything will work out, don't worry". My feeling was always that you had to make everything work out.

"I built my last transmitter around '46 or '47. I went all out on this one, I even chromed all the chassis and parts, like transformers. I installed it in two nice rack cabinets. It had an 813 in the final and operated on 20, 40 and 80 meters. I wonder where it finally wound up?

"When Art came out with the 75A receiver I bought one and it was vastly superior to the RME-69 I was using then. From that day on I always stayed with Collins receivers. When the 32V-1 transmitter came out around '48, I bought one of those and it was a great rig. When the '2 and the '3 came out I upgraded to them and finally to the KW-1. I gave up building primarily because I had just had done



Inside the James Knights Company plant in 1948



The last transmitter that Lee built in 1947. It had an 813 in the final and operated on 20, 40 and 80 meters.

Lee Faber from page 25

enough of it. Maybe I did so much building in the earlier years because what I wanted just wasn't available. And of course I had to keep my ham radio costs down as much as I could. I was also developing other interests.

By 1950 we had the James Knight Company firmly established as a crystal manufacturing company. We were back up to about 250 employees, we had good engineers and a good sales force. At this time we had an opportunity to branch out and against the opinion of some of our advisors we purchased the rights to manufacture a farm water hydrant. With that deal we also acquired a salesman by the name of Ed Aberdeen. He sold the hydrant for us - very successfully I might add - and as he became more familiar with crystals he sold those for us too. He was a fine man and he and Jim worked very well together. Several years later when we sold out the hydrant business - and it had been very profitable to us - Ed Aberdeen left and went with it.

"Neither of my two boys, Bart or Jerry, showed any interest in the crystal business, but my daughter Beverly was always around the plant from the time she was just a youngster. By the time she was in highschool in the late '40's she really knew the business. When visitors came to the plant we would always have her show them around.

"In 1950 I decided to put up a mast higher than anything I had to that time. I was thinking of something around 60 feet. I called a friend of mine at Graybar Electric. He told me they did not have a 60 foot pole but that they did have a 125 foot one that he could cut in half for me. I said, "My God, don't cut it off, wait 'till I get there". I jumped in the company truck and drove out to their plant which was in a suburb of Chicago about fifty or sixty miles from Sandwich. The pole was as straight as a string with a 5 inch top and about a 16 inch base. Just exactly what I wanted. So I made a deal to buy it for a dollar a foot and it cost me about a dollar

a foot to get it delivered. It was delivered on a Sunday when traffic was light with a motorcycle escort in front and in back. There was a two wheel trailer clear at the back and the top of the pole rested on the bed of the truck. They arrived successfully and put it approximately where I was going to erect it in my back yard. The mast had originally come from Washington state on 3 railway flatcars. It was Washington Fir. The Graybar company had given it a coat of creosote which I later covered with aluminum paint to improve its appearance.

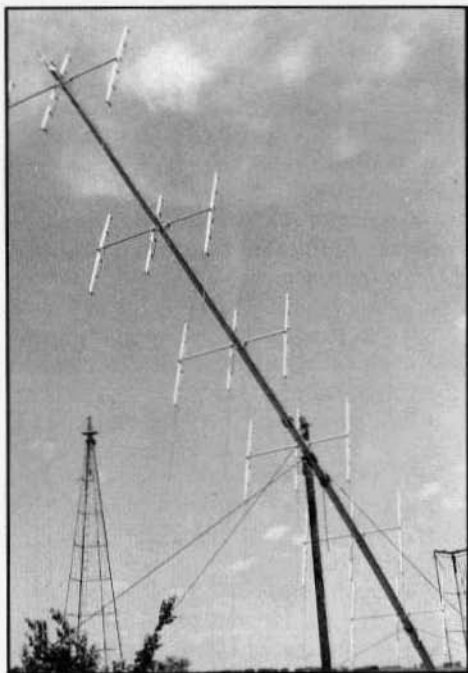
"I decided to put up 36 elements on 10-meters. I was a big fan of ten meters. The band was still good although on the down-side of that cycle.

"I built the booms from 2-1/2" aluminum tubing and mounted them on an aluminum framework. These were bolted to the mast with stainless steel bolts that went completely through the mast. The antenna elements were surplus U.S. Army tank whips that came copper plated and painted.

"I decided to rotate the whole mast so it was necessary first of all to build a tower that would support the mast to about the 35 foot level. Then I had to come up with a means to rotate the mast. This I accomplished with a milling table powered by a 3/4 hp motor.

"The day we put it in the air was like a Fourth of July celebration. Over 100 hams from all over showed up to help besides all our neighbors and friends from Sandwich. I don't know how many people were there in total. They brought their wives and kids and we provided soft drinks and sandwiches. By late afternoon, with the help of two winch trucks we had the antenna pole locked into the supporting tower, resting on the milling table rotator.

"I started out with 600 ohm feed-line but I could never get it exactly matched. I later purchased some 50 ohm gas-filled transmission line from the Andrew Corporation. I got the standing waves down with that.



The 125' mast with 36 elements on 10 meters being raised into position. It went inside the 35' tower in the lower right hand corner of the photo.



Lee installed yagi's for 10 and 20 meters on the tower in 1951

The results of all this effort and expense were phenomenal to say the least. It was an absolutely incredible antenna. I could work DX (using a 32V-3 running 100 watts out) just like I worked locals. I was using it with good results a year after the band was thought to have gone out! I remember working so many African stations that they could recognize me just by the strength of my carrier. They said I was much, much stronger than any other signal coming out of the U.S. About a year later I put up a single 10-meter beam with 2 stacked 20-meter beams below. That was all a great experience.

Around about this time we hired John Silver who had formerly worked at Motorola. He came aboard and reorganized a lot of the company; particularly the engineering department. He proposed a lot of expansion that would require borrowing large amounts of money. I

found borrowing very distasteful and stressful. When I showed my reluctance to go along with the expansion and borrowing a group that included John Silver, some of our employees and some outside investors bought out my 50% interest in the company. I was 58 years old, I'd worked hard all my life, I was financially secure, so I was ready to take it easier. I wasn't up to taking on any more stress.

I sold my home, with the towers, to a person from Sandwich and moved the family out to Arizona. A couple of years later I learned that the fellow that had bought my house took the towers down. He hired someone to climb the mast with a chainsaw and cut it off piece by piece from the top. **ER**

**Editor's Note:** Those interested in reading more about Lee's antenna should find an October, 1950, issue of *QST*. Lee produced an excellent article for this issue called "T-Day in Sandwich". Next month we'll have the final installment in this series.

# Lee Faber, W7EH...Radio Pioneer

by Barry Wiseman, N6CSW/Ø

4 Aspen Place  
Durango, CO 81301

## Part Six

When Lee sold his interest in the James Knights Company he moved to Phoenix, Arizona. His daughter Beverly stayed on with the company until 1962 when she and her husband also sold out and moved to Phoenix.

After Lee left the company it was re-organized and became Chicago Telephone Supply, Knights Company (CTS, Knights Company) and is still in business today under that name. At one time - a few years after Lee left - the company grew to 1500 employees. This was during the period when they were manufacturing quartz crystals for watches.

I thought it might be interesting to find out what their present status might be. I called and spoke with a Mr. Ed Herman, the Director of Human Resources at CTS, Knights Co. He told me that Lee's old company is still the largest employer in Sandwich, with 450 employees. They still manufacture crystals and other things like precision oscillators.

For more information I called the mayor's office in Sandwich. No one in the mayor's office was available but I did enjoy a long conversation with the City Clerk, a woman named Barbara Olsen. She's 58 years old and has lived in the area all her life. She was familiar with the Faber name but moreso with James Knights and the Knights family. She was unaware that it was Lee who got the company started and that without him there would not have been a James Knights Company. She said that most people in Sandwich today would not be familiar with the name Lee Faber.

Mrs. Olsen told me that the original James Knights Company building is still standing and contains a floral shop, a Sears store and among other things a real estate office. She also suggested I call a city councilman by the name of Louis Miller. She said he was older and might have some recollection of Lee.

Mr. Miller said that he was 72 and that he did remember Lee. When I told him that Lee was still alive he seemed quite surprised, which I suppose is a reasonable response. He was aware of Lee's contribution to the James Knights Company and recalled that a close relative - a brother-in-law - used to help Lee grind crystals in a basement workshop long before the James Knights Company was formed.

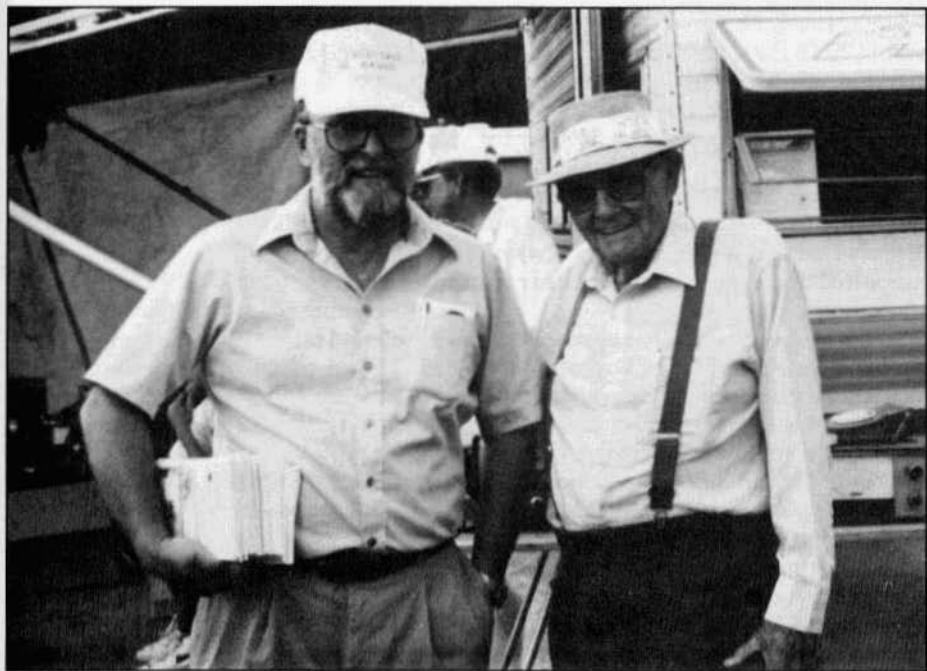
James Knights retired in 1970. He stayed in Sandwich where he was active in the community until his death in January of 1983. "The Beacon-News" a Sandwich newspaper wrote:

"He was just a super nice guy who people really liked," said an employee at CTS Knights Inc. in Sandwich Thursday about James R. Knights, the company's co-founder and a Sandwich community leader who died Wednesday".

"He was very highly respected and liked in the community," said Sandwich Mayor Fred Wehling."

I may have mentioned in a previous installment that Lee had nothing but good things to say about James Knights. I remember in one conversation Lee told me that they shared an office for 20 years and never had a serious disagreement.

One of the first things I asked Lee when I met him three years ago was, what have you been doing the last 30 some odd years since you retired? "Well", he replied, "I



The author with Lee at the Flagstaff hamfest in July of this year.

worked over half my life, and I worked darn hard, so I thought I should just take it easy for the other half." I've found out recently from Lee's daughter Beverly that that isn't the truth entirely. She said that her father has never "taken it easy". When he first got to Arizona he was absolutely "taken" by the desert and that he 4-wheeled and camped most of the state in the first couple of years he was there. He was also involved in real estate investments. At one point he tried raising exotic birds, cockatiels, etc., and then spent literally years landscaping his yard. He has also spent a good deal of time helping his good friend Senator Barry Goldwater, K7UGA, with his antennas. Another interest he's had is in the desert tortoise. He's successfully raised them for many years.

Beverly was the only one of Lee's children that took any interest in the company. She worked at the factory all through highschool and at all the jobs there. When Hank Scharf, W6SKC, a

former Collins employee, made his first trip out there in the early '50's, he said Lee turned him over to Beverly for a tour of the plant. He told me that she really knew the crystal business. He also mentioned that he repaired a 75A-4 for Lee at his home on the kitchen table. After Mrs. Faber prepared a nice lunch for him Lee flew Hank back to Chicago. Incidentally, the next time Hank saw Lee was when I got them together at the Flagstaff hamfest last July.

I've visited Lee on 3 occasions; twice in 1989 at his summer place in Show Low Arizona and this last July at the Flagstaff hamfest. We've also had dozens of long telephone conversations - most of which I've saved for posterity on tape.

One thing I noticed at Flagstaff is that Lee is very well known out in Arizona and very well liked. Travelling around the hamfest grounds with him was like being with a visiting dignitary. All the older hams knew him and are very fond of him.

#### Lee Faber from previous page

Lee's wife Ruth passed away in October of 1990 at the age of 83. They had been married for 65 years. According to Beverly, her mother was a real "people person" very extroverted and friendly to everyone. She recalls that whenever hams came to visit, her mother would always entertain the wives and enjoyed doing so. Beverly also said that her mother always supported and encouraged her father in whatever he was doing.

Since his wife died Lee has been spending more time up in Show Low and just recently he purchased a bigger, double-wide mobile home and has had it installed in a location somewhat remote and better for ham radio operations than where he was previously. He has many ham friends up in the Show Low area and enjoys his time up there. I'm not sure he wouldn't prefer living up there year round if it weren't for the friends and family he has in Phoenix.

These days he's very busy. Acting as his own 'general contractor' on the new mobile home project seems to absorb him entirely. He's up at the crack of dawn and puts in a full day running here and there purchasing supplies, arranging for various tradesmen and just making sure everything is done right. Later this fall we're planning another trip to Show Low. I expect to see Lee's new place just as I described his trailer house when I first met him. Everything will be 'shipshape' and well organized.

I've enjoyed meeting Lee, getting to know him, having access to all his archives and writing about him. He is a rare individual and I respect him very much. I value his friendship and I'm very honored to have had this close relationship with him.

Hopefully this is not the last we'll hear about Lee. I'm sure he could homebrew another big transmitter, or put up another monster antenna or even start another company. I'll be in touch with Lee and will keep the readers of ER posted.  
ER

#### Postscript

I've received quite a number of letters from people who knew Lee when he was in the crystal business. Some of them I've included in this final article because I think they are something of a testament to how Lee related to others and how they remember his kindness.

#### Dear Barry

Regarding your article on Lee Faber. He used to call on Collins when operating his crystal company. Then after WW II when I "hit the road" for Art peddling avionic equipment I was in Chicago one Friday at the airport - finished about noon - so called Lee in Sandwiche, Ill, just to say hello. He asked where I was on the airport (now Midway in South Chicago) and I told him at Butler Aviation (a FBO, that means Fixed Base Operation). He said stay right there and he would fly his Navion in and pick me up. In a short time there he was. I climbed aboard and off we went to Sandwiche.

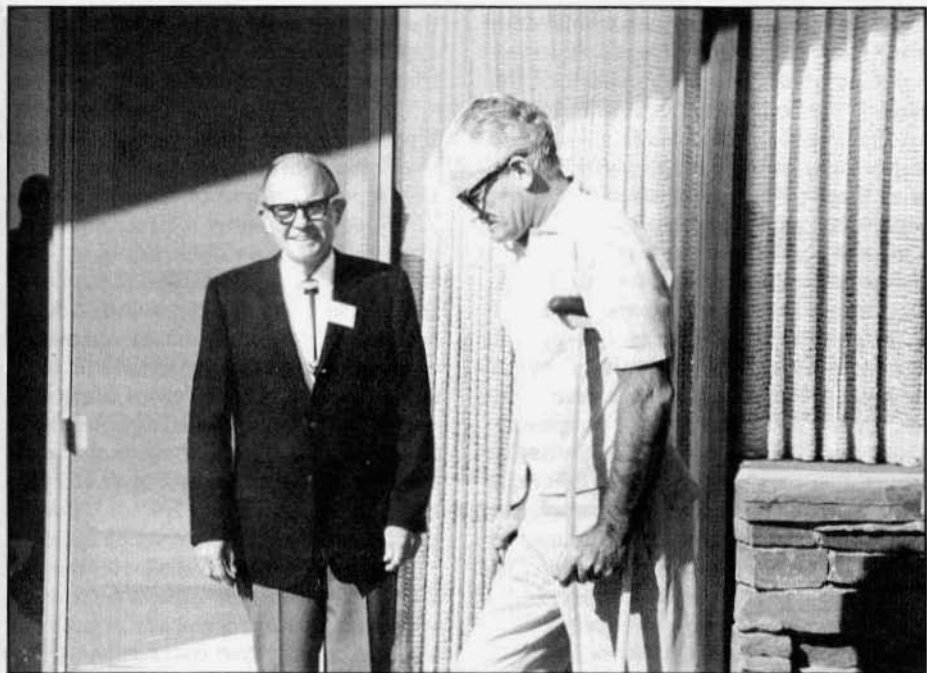
I spent a memorable couple of days with him and his family. I got to see that TALL beam antenna. The first one I ever saw where the tower rotated. He had taken the drive head off a pretty good size lathe and mounted it in a horizontal position. Can't remember just how many 3-el 10 M beams he had on it but it was a sight to behold.

**Bill Steward, K6HV**

#### Dear Barry

A friend of mine (W6EHR) in San Diego just sent me a copy of your May 1992 issue of Electric Radio (#37), because you have an article in it concerning our old friend, Lee Faber (W7EH).

I have been retired for over 22 years, & have moved to the Olympic Peninsula 20 years ago. I have only had one QSO with Lee since that time. He used to join a group of other of my old friends, mostly from the Southwest; &, as I initially retired to Parker, AZ, our last occasion to visit with Lee was when we had a 'hamfest'



Lee with his good friend, Senator Barry Goldwater, K7UGA, sometime in the early '60's.

with the entire group at our retirement location. At that time the group included W7EH, W6GZZ, W6LSN, W6EHR, W6SYA/WA7HOT and several others whose calls I can't recall on short notice. Most of these have become Silent Keys over the last 2 decades. Myself, Reed Evans (W6EHR) and possibly Lee are still active.

I might mention just how I came to meet Lee more than 40 years ago, when I had a requirement for several sets of 300, NT-cut crystals for special developmental equipment. Having canvassed all of the sources for quartz crystals in the country, Lee, at Knights, in Sandwich, Illinois, was the only one which would take the job. He satisfied our need in exceptionally short time. At that time, Lee had the highest ham antenna which I had ever seen; and he used to fly me back to O'Hare to catch my flight back to San Diego.

I have digressed more than I had intended; but, what I really want to know

(without having to wait for Part 2 of your story concerning Lee) is he still living? and if so, can you provide me with an address where I might write him and possibly re-establish contact?

Thank you for any further information you can give, and I will look forward to your next issue of 'Electric Radio'.

#### **Editor's Note:**

I advised Art that Lee was 'very much alive' and they have been in correspondence. Lee tells me that he as a result of the series of articles we've been doing on him, he has re-established contact with many of his ham friends from the early days.

Regarding the photo in last month's issue of Lee with James Knights and an aircraft. I mistakenly said it was a Navion when it's really an Aircouple. About 25 readers have called or written to point out the error. I apologize for the error and in a future issue we'll have the picture of the Navion for all you aircraft enthusiasts.