

Radio Guide

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Kintronic Labs – Spanning the History of AM Terrestrial Radio



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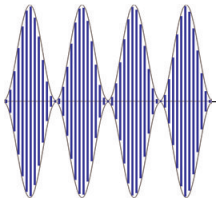
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SUCCESS STORIES
FROM THE FIELD.
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COMREX





Cover Story

by Tom King

Kintronic Labs – Spanning the History of Terrestrial AM Radio

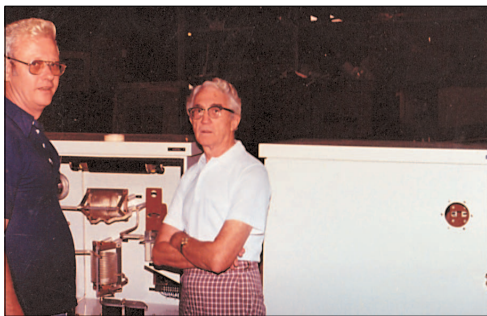
In 1949, Louis King, founder of Kintronic Labs, resigned from his position at RCA as an AM high power transmitter design engineer to return to his birth place of Bristol, Tennessee to pursue his love of radio frequency (RF) antennas and components.

Shortly after he returned to Bristol with his wife, Elizabeth, and two children, he obtained his PE license in Tennessee and Virginia and established a new business as a regional broadcast consulting engineer in office space provided by his father, Arthur King.

Manufacturing Begins

In the early 50's he started designing and manufacturing FM isocouplers and AM antenna tuning units using inductors manufactured by E.F. Johnson and capacitors manufactured by Sangamo. Louis hired two Army veterans that were employees of his father, Boyd Wright and Earl Tolliver, who he trained to oversee manufacturing and field service, respectively. He out-sourced the metal cabinet works and the painting.

In the mid-fifties he manufactured his first directional antenna phasing cabinet and discovered, much to his disgust, upon completion and testing, that the cabinet would not fit through the door of the room in which it was fabricated. Thirty years later I made a similar mistake on one of my early phasor cabinet designs, which resulted in us having to lower the cabinet into the customer's transmitter building prior to the installation of the roof.



Louis King (right) with Bob Seats at the original Kintronic Labs factory in 1981.

Consulting Too

During these early manufacturing years of Dad's business, he was also providing broadcast consulting services and was involved in the preparation of AM license applications and directional antenna Proofs of Performance for many clients in the southeastern U.S.

It was in 1962 that Dad consulted with myself and other family members to arrive at the company name of Kintronic Laboratories.

Many Friends

As a broadcast consultant he enjoyed working with such esteemed Professional Broadcast Engineers as Bob Silliman, Ogden Presthold, Bob duTreil, John Mullaney, Palmer Greer and others.

He would often leave our home around midnight to work on transmitters that were off the air.

I said to myself, at the time, that this was not a profession that I would want to pursue, often times having to work through the night. Well, I, like Dad, have been very thankful for the many friends that have truly served as my mentors and sources of encouragement in the broadcast business, and I have no regrets for having eventually gotten into this business as a result of the persistence of my dad.



Elizabeth King Running Accounting

Business Begins to Blossom

By the early 60's, Louis' business grew to the point that he had to seek a facility with more manufacturing space. It was at this time that he moved to a rented building located in downtown Bristol.

When E.F. Johnson's inductor and RF contactor production was discontinued, Dad built his own.

Undertaking the design of fixed and variable inductors and RF contactors, he worked with Boyd Wright and a new machinist, Bob Seats. He improved the design of the E.F. Johnson inductors by changing the frame bars from a straight design to a bowed design to conform to the inner radius of the inductor winding. This made it easier for field engineers to adjust the inductor without scratching up their knuckles in the process.

More Innovation

Dad also changed the round contact pins on the E.F. Johnson contactors to a rectangular design, to facilitate a more robust, larger surface area contact between the contact bar and the finger stock in the contact holder.

He also developed a superior roller contact design for 20 Amp variable inductors, resulting in increased surface contact between the roller assembly and inductor winding. This served to eliminate arcing and pitting under power. The ultimate impact of these design improvements was a more reliable and user-friendly AM antenna system.

Big Contract – Positive Results

In 1977 Dad signed a contract with Gates Radio to provide a 3 x 100 kW AM triplexer for installation in Rio de Janeiro, Brazil. This was the largest project that he and Kintronic Labs had endeavored to produce up to that time. Before taking on that project, the company had been relying on bank loans to keep their operation running.

Upon completion of this high power AM project Kintronic Labs was out of debt and has maintained a positive cash flow ever since.

Growth and Innovation Continue

It was around this time that Dad discontinued his broadcast consulting business to devote his full time attention to the manufacturing of broadcast transmission equipment.

In the late 70's he worked with a manufacturer of non-inductive wire-wound resistors to design and develop a series of convection cooled and forced-air cooled transmitter test loads for carrier powers from 1-50 kilowatts plus 125% modulation. He later developed 100 kW and 200 kW load designs based on the successful launch of the lower power loads.

Moving Into the Computer Age

Up until 1982, Dad completed all of his antenna system designs using a slide rule and tabulated data, until the advent of the handheld calculator.

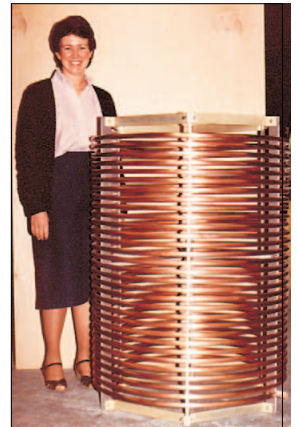
In 1982 Ron Rackley, PE, left the firm of Jules Cohen Broadcast Consultants in Washington, DC and became the first full time engineer employed by Kintronic Labs. Ron arrived about the same time as the Radio Shack TRS80 personal computer and the BASIC programming language.

Ron was instrumental in getting Dad into the computer age and the design productivity of the company increased many fold.

Can Do – We'll Figure It Out

One thing that I learned from Ron during his time with Dad, was that Dad was always ready to accept any challenge presented by a customer agreeing to provide a solution without knowing what that solution would be at the time.

Dad would get off the phone, and they would look at each other and say, "How are we going to do that?" Dad would say, "Well, I got my tail in a trap again." But the amazing fact about Dad was that he would find a solution to many challenging problems, and he grew his business as a result of this "can do" attitude - the same attitude that continues at Kintronics today.



Gwen With One Huge Coil

Tom Joins the Family Business

Ron decided to return to the broadcast consulting business after one year in manufacturing, and I left a career in military aircraft defensive systems development, test and evaluation, and returned to work with Dad in early 1983.

Upon my arrival at the company, I found my sister, Gwen, was in charge of drafting, my mother was in charge of accounting, and Boyd Wright and Bob Seats were in charge of our manufacturing. *(Continued on Page 8)*



Kintronic Laboratories, Inc.
 A global leader of world-class
 radio broadcast antenna systems
 and components

“If it’s AM Radio, it is Kintronic Labs.”

- Site Planning**
- Design of Digital-Ready AM Antenna Systems**
- Custom Fabrication of AM Antenna Systems**
- On-Site Services and Technical Support**

Kintronic antenna systems are powering radio in the major markets in all 50 of the United States and in more than 70 countries on six continents. Very few companies do what Kintronic Laboratories does. And none bring the expertise and design to radio broadcast antenna systems and components like Kintronic Labs. Kintronic.com

With more than 200 years of combined engineering and technical experience, Kintronic is a global leader of world-class radio broadcast antenna systems. Kintronic engineers can custom-craft your radio broadcast antenna system or component need for any location, at any fixed site, or to meet any mobile requirement.

Cover Story

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VSU-1 Voltage Sampling Units Under Test

Success Has It's Toll

When I returned the business was booming, and Dad was working every day except Sunday morning when he attended the worship services at First Presbyterian Church where he ultimately became an Elder Emeritus.

As a result of the stress brought on by his heavy work schedule, including long hours and late nights, Dad had a stroke eight months after I arrived, resulting in a discontinuation of his regular involvement in the company for about two years.

Tom Keeps Things Running

I had thankfully learned enough about the business by that time and was supported by many very knowledgeable mentors in the broadcast community to enable me to keep the family business running.

During this time we incorporated in the state of Tennessee as Kintronic Laboratories, Incorporated.

In early 1985 we moved to our present location in Sullivan County outside of Bristol where we consolidated our administrative and manufacturing facilities.

Our new location allowed us to grow without the fear of outgrowing the facility

Innovation Continues

Our company continues to grow, developing new products and refining our designs to meet more challenging needs.

More recent developments include designs of RF inductors and RF switches and related accessories, to facilitate the manufacture of RF feeder systems designed for transmitter power levels up to 2 megawatts.

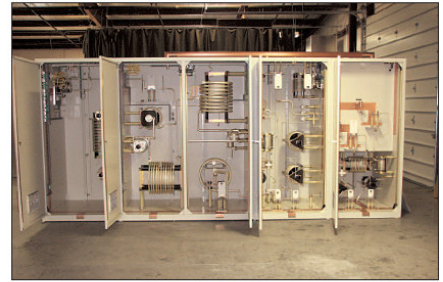
Another significant development was our joint introduction with Star-H Corporation of the KinStar low profile antenna. This is the first AM low profile antenna to be type accepted by the FCC for the U.S. market.

Kintronic continues to find areas to expand their market including their new fast deployment transmission systems.

Remaining Vibrant and Moving Forward

We remain a vibrant company and Dad's "Can Do" attitude continues to lead our efforts every day.

From the time that I became integrated into the Kintronic family, our mission has been to provide the highest quality broadcast products, in a cost-effective and timely manner, while serving our customers with honesty and integrity.



A 50kW Four Tower Phasor

A Faith Based Company

We know without a doubt that our company is what it is because of the grace and mercy of our Lord Jesus Christ.

One thing that Dad knew to be true, and that we as a company know to be true, is that – "Anything is possible with God." – He is the one that makes all things possible.

Tom F. King, is the President of Kintronic Labs, Inc. a family owned business located in Bristol, TN. He holds an MSEE degree.

For more information about Kintronics visit their web site www.kintronic.com or call 424-878-3141