



HISTORY OF THE C. D. TUSKA COMPANY



by Dexter Deeley

Clarence Tuska was born in New York City in 1896. At an early age (1909) he became interested in electricity and radio. He read available material on the subject and built a simple coherer receiving set of the Marconi type. The die was cast: Tuska's life-long interest would be radio.

Shortly after, his family moved to Hartford, Connecticut, where he became acquainted with another amateur enthusiast, Bill Ball. The two started to build and experiment with different types of receivers. This led to building receivers for others.

One of these receivers was made in a small box and consisted of a single slide tuner, crystal detector with a single head phone. Being an enterprising young man, Clarence was able to place the set in a local toy store on consignment.

After watching the store window for several days, he noticed the set was missing and promptly went in and asked the owner, a Mr. Parker, for his money. The owner replied he had sold the set to a Mr. Hiram P. Maxim, but that it had been returned because it didn't work.

This of course upset Clarence since he had tried it out and it had worked perfectly. Finally, after a lot of encouragement from his mother,

he, backed by Bill Ball, took the set to Maxim's home to show him why the set failed to operate.

The meeting (and demonstration) was a success and they left with an order to build Mr. Maxim a "first class" radio set. With some stretch of the imagination, this could be the first commercial Tuska receiver.

Maxim was very impressed with Clarence and they soon became close friends. For a more complete report, see "A Memorable Evening", January, 1961 QST magazine. (Maxim and Tuska founded the A.R.R.L.; that of course, is another story.)

In 1916, Maxim was asked to judge the A. C. Gilbert Company contest for boys. After the contest, Maxim told A. C. Gilbert about the great future of amateur radio. Gilbert became interested and wished Maxim to become a consultant for the A. C. Gilbert Company if they were to manufacture components for the radio amateur. Maxim said he did not have the time but knew a young man who could fill the bill, namely, Clarence Tuska.

At this time Clarence was attending Trinity College in Hartford and any income would be most welcome. So he called on Mr. Gilbert at his New Haven plant and was accepted on a

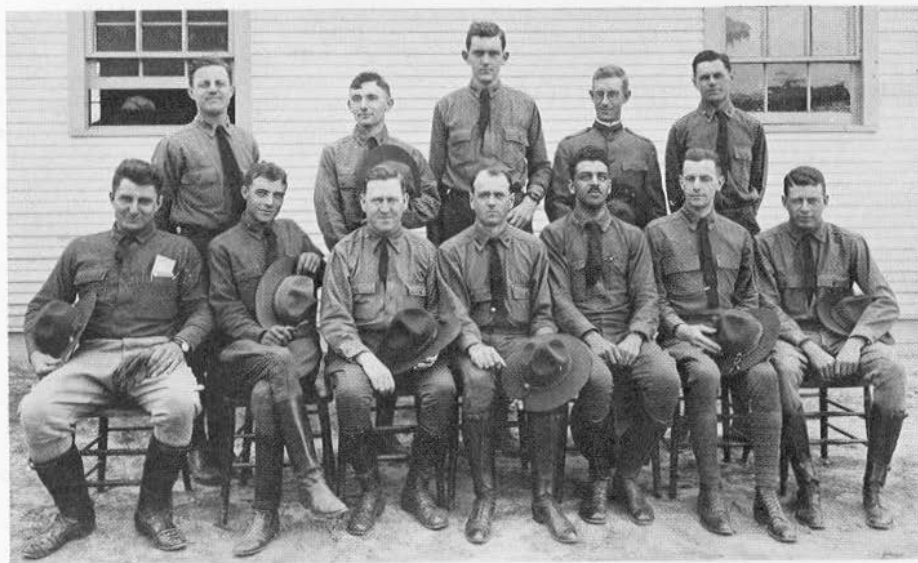


Figure 1 - Lt. Tuska at the U. S. Air Service School for Radio Operators, Ellington Field, Texas, 1918. This picture is of particular interest since pioneer Elmo Pickerill is front row center. Tuska is at Pick's left.

one-day a week consulting basis.

When World War I started, Tuska took leave from Trinity and was appointed a Second Lieutenant in the Radio Section of the Signal Corps. He recalls that his last assignment for Gilbert was work on a "trench radio transmitter".

When the war ended, Tuska returned to Hartford and resumed consulting work for A. C. Gilbert who wanted to become more firmly established in the growing radio field. Tuska believed Gilbert should abandon the toy approach to radio manufacturing and follow recognized radio standards. As an example: a black fiber panel is not an acceptable substitute for a bakelite panel as the former easily warps and would absorb moisture. A brass paper clip may look like a machined switch point but the paper clip would not have a permanent electrical connection with its brass tabs and in time would become a poor electrical connection.

Since Tuska soon found Gilbert would not accept the advice he was paying for, he eventually resigned, believing his time as well as Gilbert's money was being wasted.

Discouraged with Gilbert's attitude, Clarence decided to form his own company. He discussed this with Maxim, and the two recruited several other stockholders and organized the C. D. Tuska Company. (Of interest is the fact that Tuska remained a consultant to A. C. Gilbert until 1923.) Manufacturing started in a single room over Maxim's Hartford office. The staff: Tuska and two helpers!

The first piece of equipment manufactured by the new company (1919) was a galvanometer (see Figure 2). It sold for around \$5.00 and was used in connection with a Wheatstone bridge to measure resistance. Other instruments were designed to measure capacity, in-

ductance and wavelength. Next came a self-contained 24-volt battery and rectifier. The battery would hold its charge for three weeks under normal load and then could be recharged by plugging the unit into a 110 volt A.C. line.

Neither of the first two items were big sellers, so Tuska turned to amateur radio for his next product.

In 1920, regenerative circuits were becoming very popular, so he developed a "differential capacitor" which could be connected into a vacuum tube plate circuit. It was called a "Tuska Tickler" (see Figure 3). The condenser had two sets of fixed plates and one interacting variable set which produced capacitive feedback and regeneration. It sold very well.

Tuska Tickler



Type 161

A new device to make a regenerative receiver out of your loose coupler. Any ordinary receiver with any type of audion can be made the equal of any regenerative set you ever saw, by the use of THE TUSKA TICKLER.

THE C. D. TUSKA CO.
Hartford, Conn.

Figure 3 - The "Tickler", May 1920, QST.

The "Tickler" was advertised extensively with one ad coming to the attention of Major Edwin Armstrong and his patent attorney, Mr. Taylor. The latter approached Tuska and convinced him that his "Tickler" infringed on the Armstrong regeneration patent. Having no recourse, Clarence soon became the owner of an Armstrong license. This was to prove quite fortunate, as you will see.

With the success of the Tickler, Tuska expanded his radio component line to include a variety of inductance coils, filters, variometers and knobs. The big change came in 1921 when the C. D. Tuska Company decided to assemble their components into a "tuner kit" (see Figure 4). The kit was basically two variometers and a

(Cont. on next page)

Radio Laboratory Apparatus

We specialize in good but inexpensive apparatus for experimental radio work. Measure capacity, inductance, wave length, and take V. T. curves with our instruments.

Send for our Scientific Experiment Books. Complete Radio Series of 5 books, \$1 postpaid.

Send for our Catalog No. 1

The C. D. TUSKA CO.
HARTFORD, CONNECTICUT

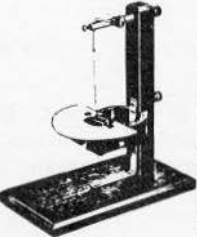


Figure 2 - The company's first product, a galvanometer advertised in October, 1919, QST.

ASSEMBLE YOUR RADIO

**Buy
Tuska Parts**

SEND IN FOR OUR CATALOG AND
BULLETIN No. 1.

2 Tuska Variometers.....	\$12.50
2 Tuska Dials.....	3.30
1 Tuska Variocoupler.....	7.50
1 Drilled and Engraved Panel.....	5.00
2 Pair Brackets.....	.70
1 Switch.....	.35
6 Switch Points.....	.35
6 Binding Posts.....	.72
10 Feet Connecting Wire.....	.08
Total.....	\$30.50
SPECIAL PRICE.....	\$27.50

The C. D. Tuska Company,
261 High Street,
Hartford, Connecticut

Type 223 PRICE \$27.50



Figure 4 — Tuska's Tuner Kit, December 1921, QST.

variocoupler. It was called the Type 223 and sold for \$27.50.

By 1922, the broadcast craze was in full swing and a growing number of people would pay for an assembled set. Tuska rose to the challenge by re-designing his tuner kit and came out with a factory assembled tuner, the Type 220. The price was \$75.00 (see Figure 5).



Figure 5 — The Type 220 Tuner

Shortly thereafter, a one-tube regenerative receiver was introduced for \$75.00, the Type 222. This price was later reduced to \$63.00.

Also the same year, the company brought out its first set really designed for the broadcast listener rather than the amateur: the Type 224 one-tube regenerative receiver. The set was priced at a low figure of only \$35.00 to attract everyone.

Tuska hadn't entirely forgotten the amateur, however, for in 1922 he also designed a deluxe three-tube regenerative set, the Type 227. This set became the Type 225 for broadcast listeners in 1923.

By 1924, C. D. Tuska was re-designing his sets to conform to the broadcast market: more selectivity, ease in tuning and a receiver that in appearance would blend in well with household furniture. At this time a radio friend, Robert

Miner, came to Tuska and described a very good feedback circuit he had discovered.

The Miner circuit had a number of excellent features for a broadcast receiver. The set resulting from this circuit was called the "Tuska Superdyne" (see Figure 6). It came in several cabinet styles including a desk (see Figure 7) and ranged in price from \$120 to \$350.

The year 1925 saw the introduction of the last Tuska model, the Superdyne Jr., a three-tube reflex set. Its price: \$85.00.



Figure 6 — Tuska Superdyne (1924).

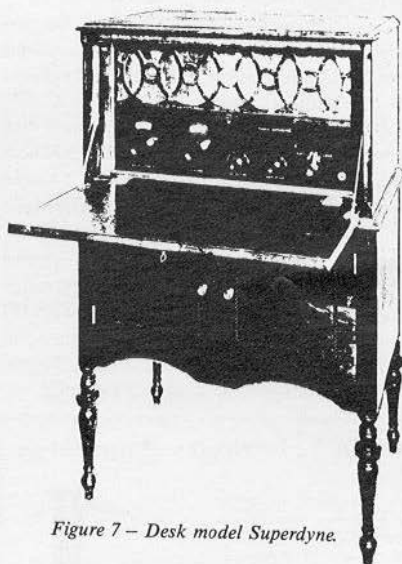


Figure 7 — Desk model Superdyne.

In 1926, the C. D. Tuska Company, like many others, ran into financial difficulties. The advent of the neutrodyne and superhet circuits for which he was not licensed and the large number of radio companies in the market made competition by a small organization (125 employees at peak) impossible. Clarence assessed the situation and determined the company's most valuable asset was the Armstrong license

which was saleable with the *company only*. The question was: who would be interested?

Clarence approached Mr. Atwater Kent with the proposal that if he bought out the C. D. Tuska Company, Mr. Kent would at least have an Armstrong Regenerative Circuit License (Mr. Kent has not taken out too many patent licenses). Tuska also explained that suits involving the regenerative patents were pending. Mr. Kent was interested, a selling price was agreed on, and the C. D. Tuska Company was sold to the Atwater Kent Manufacturing Company. (The regenerative license was never used by Kent.)

Final arrangements were such that Tuska would join the A-K Company as a patent consultant. In time, he became an expert in the field as a result of his work with A-K and at LaSalle University, where he specialized in patent law.

In 1935 he joined the patent department of the Radio Corporation of America, becoming its Patents Director in 1947, a post he held until his retirement. Mr. Tuska is the author of numerous papers and several books and lives near Princeton, New Jersey.

References:

- Personal communication with Mr. C. D. Tuska
- QST magazine
- Wireless Age magazine
- Radio Collector's Guide

Equipment Manufactured by the C. D. Tuska Company:

PRODUCT	YEAR
Galvanometer	1918
Hi-Volt Storage Battery	1919
Tuska Tickler	1920
C. W. Inductance Coils	1920
Tuska Filter	1920
Tuska Variometer	1921
Tuska Variocoupler	1921
Tuska Knob and Dial	1921
CW Transformer	1921
Type 223 Tuner Kit	1921
Type 220 Tuner	1922
Type 222 Receiver	1922
Type 224 Receiver	1922
Type 227 Receiver	1922
Type 225 Receiver	1923
Type 228 Receiver	1924
Tuska Superdyne	1924
Tuska Superdyne Jr.	1925

(Note: There will be an illustrated talk on Tuska and his products at the 1980 AWA Conference.)

BACK ISSUES

Historical reference and good reading.....

The following OLD TIMERS BULLETINS remain in stock. Make out check to A.W.A. and mail to:

DEXTER DEELEY
8 Briar Circle
Rochester, N.Y. 14618

Vol. No.	Vol. No.	Vol. No.
15- 1	16- 4	18 - 3
16- 2	17- 2	18- 4
16- 3	17- 3	19- 4
		20- 2
		20- 3

\$1. each ppd.

Vol. No.	Vol. No.	Vol. No.
12- 1	13- 4	17 - 1
12- 3	14- 3	17 - 4
13- 1	14- 4	19-1 with mono.
13- 2	15- 2	19-3 with mono.
13- 3	15-3	20-1 with mono.
		20-4 with mono.

\$2. each ppd.

Vol. No.	Vol. No.	Vol. No.
2- 3	10- 4	18- 1
7- 4	11- 3	

\$3. each ppd.

Vol. 1 #2, Vol. 1 #3 40¢ ea. ppd.
(Reprints for reference)

"CAT'S WHISKER" still available..

Members who missed out purchasing this fascinating book on British radio can still obtain a copy by writing the author. A beautiful book full of pictures of early crystal sets, tube receivers, etc.. plus text.. Price is: 6:75 pounds (Sterling bank draft only). The author is a well known British historian and Secretary of the British Vintage Wireless Society. Send draft to: Jonathan Hill, 14 Victoria Court, Kinsbridge Ave., London W3 9AH
Great Britain

ON REVIEW: DD-1 Receiver

Hallicrafter's DD-1 diversity receiver is described in detail by John Nagle, K4KJ in the April, 1980 issue of Ham Radio magazine. This most unusual receiver of the 1930's is a rare one.. the only other known set is owned by AWA member Charles Dachis.