

# ADVENTURES in CYBERSOUND

**Radio Transcriptions : A History of Radio Broadcast Recordings** by [Michael Biel](#), Ph.D.

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Although some recordings were made of broadcasts as early as 1923, the first program specifically recorded only to be broadcast was the pre-NBC Amos 'n' Andy from March 1928 to Sept 1929. Later in 1928 another Chicago company, The National Radio Advertising Co., started syndicating recorded programs with advertisements. (Amos 'n' Andy was unsponsored.) Other companies began syndication of recordings in the next few years, including the World Broadcasting System which had over 300 stations broadcasting the Chevrolet Chronicles in 1930. The World network was more than three times the number of stations on either CBS or the combined NBC Red and Blue.

The networks staged a campaign against the use of recordings, sometimes saying some of the most awful lies about the syndicators. For example, they accused the syndicated programs of having bad sound quality, whereas it really was the wireline network which had dreadful sound quality off the main trunk line. Small stations away from the trunk would get far better sound off the recordings than off the line! NBC was able to get the upper hand by creating some of their own recorded syndicated programs in 1934 which were placed on their affiliates with contracts that were later declared improper by the FCC and the Justice Department. The networks banned recordings ONLY to make their wireline networks necessary to maintain. No other country had networks with a general ban like this.

During the early '30s some performers, advertisers, and even the networks hired recording studios to make air-checks on uncoated aluminum in order to be able to listen to the programs and improve the performances. Yes, indeed, the recordings were made right on a disc of plain old aluminum. The secret is that the grooves weren't cut, they were embossed. No material was removed from the disc, the groove was actually impressed or knurled into it. It used a rounded diamond stylus on a heavy shaft that had a bend in it at about 45 degrees. A very heavy weight was added to the recording head.

Ironically, these recordings are very delicate. While lacquers could be played back with steel needles, the aluminums were supposed to be played only with fibre (or bamboo) needles. When playing them now on modern lightweight equipment care has to be taken that the needle is really in the groove. It is possible for the needle to sit on the land between the grooves and start to impress its own shallow groove on top of the land!

The aluminum disks were said to have been used starting in the late 20s (I've heard rumors of 1927, but have never confirmed anything before 1929), and

were the preferred method until the introduction of lacquer coated aluminum discs in late 1934. A few companies clinged to their use into the late 30s, but the lacquers had obvious sound quality and wear benefits. A fibre needle only lasted 5 minutes so that playback limitation restricted the recording time length until in the mid 1930's Fairchild Camera Corporation came up with a plastic impregnated fibre needle and then manufactured the first 16-inch bare aluminum blanks.

Programs from the early 30s that are preserved only because of this type of disc include Fred Allen's Linit Bath Club Revue, some of the early Jack Benny and Burns & Allen shows, and Rudy Vallee's vast archive of his early broadcasts. Some of the early NBC programs in their archive that were on these discs include the W.E.N.R. Derby and some recordings of the news specials from the stratosphere balloon expedition.

After the introduction of the lacquer coated disc in late 1934 stations started to get their own recording equipment. NBC began making their own recordings in 1935, and CBS followed in 1938. Mutual allowed some recordings on their network starting in 1936, but NBC only allowed a handful before the last years of World War II. They did make file recordings of many programs, calling them Reference Recordings. They never arranged to have any re-broadcast rights to any of these programs. They could only be used in a non-broadcast context.

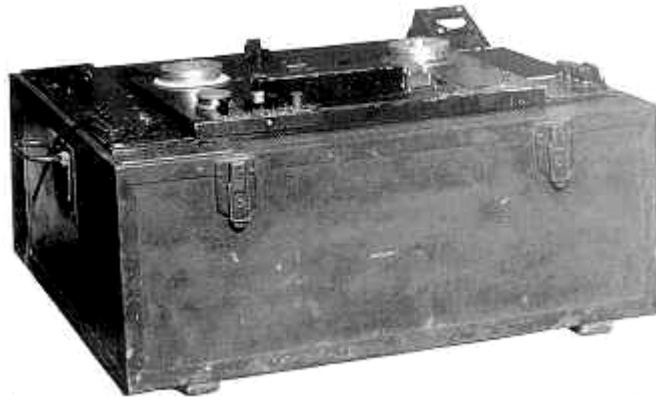
Some network shows were allowed to be delayed broadcast on some stations, but this was usually controlled by the sponsor if the program was owned by the ad agency. After the War the networks started to have daylight saving time delays during the summers, and ABC began using tape for this purpose in 1947. ABC had previously allowed Bing Crosby's **Philco Radio Time** to be broadcast via edited recordings. They used discs at first. When they first mastered onto tape they still dubbed to disc until the daylight saving time delay experiment showed that tape was reliable. Local stations continued to have some syndicated programs, recorded commercials, and also recorded music library services throughout the '30s and '40s. NBC FINALLY removed the restrictions of the use of recordings on the network in 1949.

## **Tape Recording**

Tape started to be developed back in the 1920s by **Fritz Pflaumer** of **BASF**, and the machine was developed by the **AEG** company, the German GE, so to speak. It was publically displayed at the 1935 Radio Show in Germany, but it was not up to the quality of a good disc recording. The tape was improved a bit and the machine improved, but when one was sent to the American GE in Schenectady in 1938 their report was that it was not much better than a wax cylinder dictating machine. And this from a huge machine using tape at 30 inches per second!

The Germans have always been miffed about that report because they still feel that the machine must have been operated incorrectly. I have discussed this with

their researchers because in all likelihood the **AEG Magnetophon model K2** serial number 1024 that I own is that very machine. It is two numbers lower than the one that BASF has, and mine is more completely original than theirs is, because they continued to use it and replaced worn parts with newly fabricated ones. Bias was re-discovered around 1939 and greatly improved the performance of the machine. It was introduced into German radio around that time, and was used for syndication of classical music and opera. Over a hundred of these recordings were made in STEREO but only seven of the stereos survive.



**Original Magnetophone brought out of Germany, c.1945**



**Original Magnetophone brought out of Germany, c.1945**



**Original Magnetophone brought out of Germany, c.1945**

During the war there were numerous articles about the Magnetophon in the German magazine **Rundfunk**, and I have photocopies of the articles from the Library of Congress. Pictures, diagrams, descriptions, and explanations of its use were all published in the magazine that was the Radio Guide for Germany. That is really keeping it secret, isn't it!!

At the end of the war the tape machine was discovered by the Allies liberating radio stations. While the K6 was a vastly improved machine over the pre-war K2, just because [John \(Jack\) T. Mullin](#) had never heard about it doesn't make it a war secret. Capt. R.H. Ranger and Herbert Orr also discovered machines. Mullin sent several back and interested Bing Crosby into investing into its development. He also interested **AMPEX** into undertaking that development.

Marvin Camras was developing the wire recorder during the late 30s and early 40s in Chicago. But there earlier had been a steel tape recorder originally called the **Blatnerphone** which was used by some radio stations as early as 1929. It was improved around 1932 as the **Marconi-Stille**. There is one known machine in working condition in Melbourne, Australia, and 5 years ago a friend of mine from the CBC shipped the 12 reels that the CBC have down to Australia to be played at the time that he would be in Australia for the International Association of Sound Archives conference that I also attended. I have a videotape of the machine in operation. All but one of the steel tapes were wartime programs with interviews of British children evacuated to Canada.

The plastic tape recorder was not the revolutionary device it has been made out to be. There were other machines that could record continuously for an hour, there were other machines that sounded better. So don't believe all of the fairy tales you hear about how the Germans used it as a secret machine to fool the allies. It became a good machine during the war, but disc recording was still

better. The tape recorder did not become a great machine until American improvements were added after the war.

The first Ampexes were in 1947, and there also were machines by **Brush**, **Magnecord**, and **Ranger**. **Eicor**, **Bell**, and then **Revere**, **Pentron**, and a few others started to work on the home market, all just before 1950. **Webster-Chicago** and **Silvertone** made wire recorder at that time also. ABC started using tape in 1948 for daylight savings time delays for the areas that did not switch to daylight time. They used **Ampex** and **Stencil-Hoffman** machines. John Mullin had started to record the Crosby **Philco Radio Time** on tape in the summer of 1947, but it was dubbed to disc until 1948.

## Conclusion

There are MANY other ways of making recordings that have been utilized over the years. Grooves were embossed in all sorts of plastic discs and films, and in one case, the **Philips-Miller** (Philips Mueller) machine utilised an optical recording system similar to motion picture film



**A Philips Miller<sup>1</sup> 'Tape' Recorder**

This machine is believed to be the Australian Broadcasting Corporation's first 'tape' recorder and installed in the then Commission's Sydney studios during the early years of WWII

The Philips-Miller<sup>1</sup> utilised a vertical groove of varying width chisled into the top opaque layer on a clear film to make a variable-area recording that could be replayed optically just like photographic film sound. A friend of mine at the Voice of America is researching some stereo recordings made on this machine in Holland in the late 30s - early 40s. WOR and WQXR used this machine (in mono, of course) in the U.S. in the late 30s till the war cut-off supplies of the raw film.