

TUBE COLLECTOR

TUBE COLLECTORS ASSOCIATION

"HISTORY • PRESERVATION • APPLICATION"

Vol. 13 No. 4

February, 2011



TUNGSRAM
RADIO

An advertisement for Westinghouse Radiotron tubes. It features a man in a red jacket and grey trousers, holding a vacuum tube. Below him is a red box labeled "FOR EVERY SOCKET" with the Westinghouse logo. The background is yellow with a decorative border of small circles.

*"All change to
NEW TUBES"*

Westinghouse
Radiotron

FOR BETTER RECEPTION

FOR "AC" RADIOS
UX226 UY227
UX245 UY224
UX280

FOR BATTERY SETS
UX201A UX201B
UX201C UX121B
UX171A

© 1934

TUBE COLLECTOR
TUBE COLLECTORS ASSOCIATION, INC.
 PO Box 636, Ashland, OR 97520, USA



The Tube Collectors Association is a nonprofit, noncommercial group of individuals active in the history, preservation, and use of electron-tube technology. *Tube Collector*, its bulletin, appears six times per year.

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To join TCA: annual dues is \$20.00 (in North America; \$25.00 elsewhere), to the address above. Please make checks payable to "Tube Collectors Association." Payment by PayPal is welcomed, to tca@jkasystems.com. The membership year runs January-through-December. Those joining after February receive the year's back issues of TCA publications. Multi-year memberships are offered: in North America, \$37 for two years or \$54 for three; elsewhere, \$49 for two years or \$73 for three.

Articles on tube topics are invited. Editorial correspondence should go to the editor at tubelore@jeffnet.org or 102 McDonough Rd., Gold Hill, OR 97525.

Renewals, changes of address, and other membership business should go to Bob Deuel at tca@jkasystems.com or PO Box 636, Ashland, OR 97520.

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FRONT COVER: Pretty much self-explanatory.

Photo: Bengt Svensson, SM0UGV

REAR COVER: Canadian Westinghouse promotional blotter from the late '20s (remember fountain pens?), slightly enlarged.

Image: Sibley collection

MICROPHONICS FROM THE EDITOR



2011 MEMBER MEETING

Our 2011 event will take place on the afternoon of Thursday, July 7, at the Causeway Bay Inn (formerly Holiday Inn), Lansing, MI. The Michigan Antique Radio Club has invited us to meet just before their long-running and successful "Extravaganza" event on Friday and Saturday. Fuller details will follow.

We expect to follow the format of the 2009 meeting, held at the same place. See the description in *TC* for Oct. 2009, pp. 5-7. The article cites some of the more interesting tubes that turned up in the Extravaganza flea market.

PHILOSOPHICAL OBSERVATION

Abel Santoro's latest description of a modern tube-making operation (Euro-Audioteam) stands in strong contrast to factory descriptions from the days of tubes as mass-market products, as depicted in makers' advertising and films like RCA's 1937 "Electrons on Parade." Back then there were depictions of huge rooms with women at workstations assembling tube mounts by the thousands, and fast-moving machinery fusing bulbs to stems. After that came the 24-head Sealex. It pumped-down, sealed-off, and getter-flashed tubes at a "sealex rate" of 360 or 420 tubes per hour, ready for the basing machine. Late in the game there was even automated mount assembly for high-volume tubes. Aging racks at the time held hundreds of tubes.

Present-day depictions show a vastly different "boutique" sort of industry, with custom glasswork on the bulbs, hand assembly of everything, individual fixed pumpdown stations, and getters being flashed by hand one-at-a-time. Aging stations typically handle ten or twenty tubes. The industry has certainly evolved!



Radio Service Dealer, June 1942

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CONTEMPORARY TUBE MANUFACTURE
"EAT," EUROAUDIOTEAM

Abel Santoro, LU8DXI

This story began with the re-launching of manufacture of electron tubes in Central Europe since the early '90s. Production was oriented to the audio markets of Europe and the world.

Every step in the manufacture of the tubes is tightly controlled, with great care and dedication from the technicians. The tubes are hand-made. Ms. Krahulcova wanted to produce the finest tubes available, ranking quality over quantity.



Ms. Krahulcova

In this context there emerges the EuroAudioTeam, "EAT," an electron-tube factory located in Prague, in the Czech Republic. The factory is directed by Jozefina Krahulcova, founder and chief consultant, who is otherwise devoted to live concerts and opera. She had worked in the Tesla Vrsovice factory in Prague since 2001, as the main market strategist for their KT88 and 300B tubes.



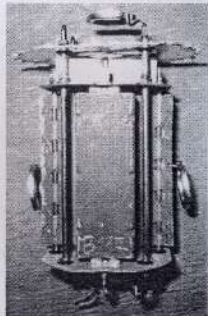
Coated mica spacers in foreground

In 2006 Tesla was acquired by a new owner and moved out of Prague, at which point Ms. Krahulcova decided to buy a part of the Tesla Vrsovice tube factory, the sector specializing in transmitting tubes. She took over the technology, machinery, and technicians. These workers had high skills from years of making tubes. This was the beginning of EAT. The tubes they make today are the KT88, ECC803S (12AX7), ECC88 (6922 or 6DJ8), and 300B.



Button bases and a KT88 mount

The photos give a factory tour showing manufacture of the "Diamond" KT88 tube.



Mount with triple getters added

The EAT operation does not sell re-badged tubes - everything is made in its factory under meticulous specifications.

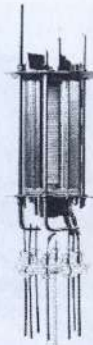
Jozefina Krahulcova believes that the extra time spent in the manufacture of each EAT tube results in a product which sounds better and with an improved life expectancy.

EuroAudioTeam is constantly present in international audio shows and has won awards in the audio-tube world.

ACKNOWLEDGEMENTS:

To Ms. Jozefina Krahulcova, owner of EuroAudioTeam, EAT.

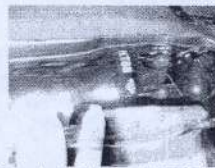
To Sixmoons Audio Magazine, www.6moons.com.



Mount welded to button base



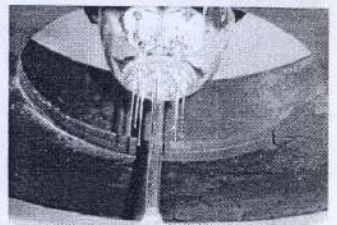
Glassblower and annealing specialist



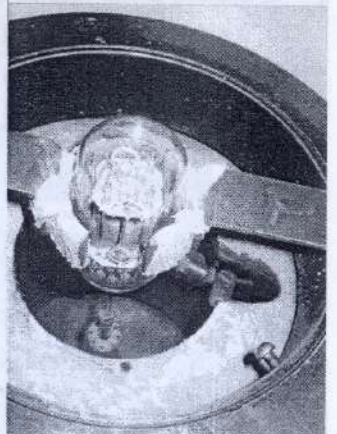
Branded "Diamond" KT88 bulb next to its forming mold



Oven for firing EAT logo onto bulbs



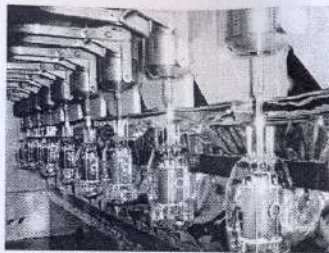
Exhaust tube sealed to the stem



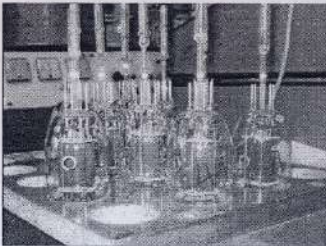
Sealing bulb to stem



Bulb sealed to stem



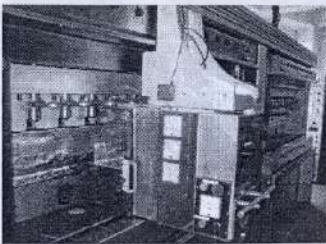
Ready for exhaust and tipping-off



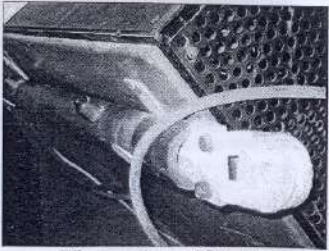
Tubes ready for evacuation



Vacuum- and getter-master



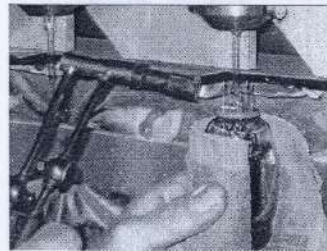
Swiss-made pumping system



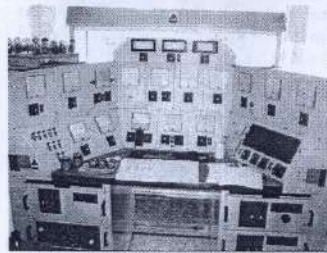
RF generator and flat-strip coil for flashing getters



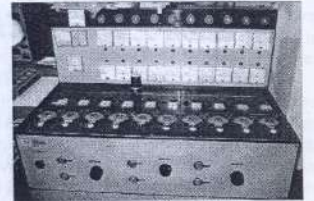
Flashing a getter with RF (note red-hot ring)



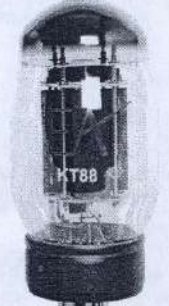
Tipping-off the exhausted tube



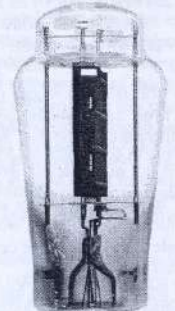
Multi-parameter test set



Ten-position ager



Finished "Diamond" KT88



300B

EAT 300B