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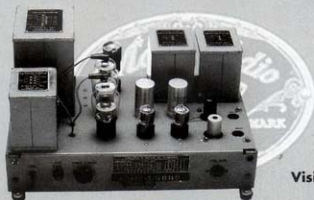
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Vintage Hi Fi From Brazil

1957 AUD-8009 Amp and Preamp

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ISSUE 17

THE ELECTRON AGE 100 YEAR OF PROGRESS IN ELECTRONICS

A Vintage Amplifier From Brazil

By Carlos Alberto Fazano ©2001 All Rights Reserved

The Hi-Fi boom started just after WWII when N.D.T Williamson, of England, developed his famous audio circuit. Since 1948, many entrepreneurs came forth in the audio business, including Quad, Leak, McIntosh, Fisher and Marantz. During the late 1940s, the first high fidelity equipment available in the Brazilian market were of the imported console type. The massive cabinetry usually comprised a radio tuner, a preamplifier, a separate audio amplifier, a turntable and loudspeaker system.

For historical purposes, the audio industry was born in Brazil about 1950. Unfortunately, much valuable information about its beginning is unavailable. Thus, this article is an overview of an audio piece produced by one of Brazil's well-known names: Standard Electrica S/A - SESA.

The Industry Behind the Circuitry

Originally, the Brazilian audio industry employed audio circuit topology of that time such as push-pull triodes, push-pull triodes with negative feedback and later on, the Williamson and Hafler-Keroes approaches. To supply the emerging audio industry demand for components such as valves, resistors, capacitors and the all-important audio output transformers, much importing had to be done. Eventually these parts were manufactured locally, allowing companies to launch a factory-assembled amplifier and finally, like in the USA, kits were introduced at a lower cost than assembled instruments. Thus was the Brazilian Hi-Fi boom started.

A Word about Standard Electrica S/A-SESA

As part of ITT - International Telephone and Telegraph - USA, established in Brazil in 1927, Standard Electrica S/A-SESA became a Brazilian company in 1938. Located in Rio de Janeiro, SESA started as a small radio shop assembling transmitters and as the dealer for International

**AUD 8009
Amplifier and
Remote Preamp**



Western Electric Co., supplying aftermarket services to Brazilian broadcasting radio stations. In spite of its former activities in broadcasting and telephone businesses, SESA expanded into the manufacture of radios, electrical components and audio equipment in 1948. In 1953, SESA began the manufacture, under V-M license, of record players used in their famous phonographs, sold

AUD 8009 Amplifier



under the trade name Super Auditorium (SA). Due to business circumstances, the company ceased operations in 1975.

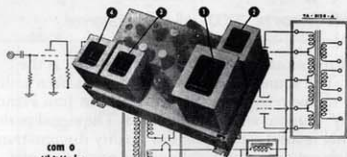
Model AUD 8009/A1 Hi-Fi Amplifier

I was introduced to the audio world in 1957. During my school days I used to listen to jazz music on my family's Standard Electrica radio-phonograph. This apparatus was a home entertainment masterpiece, and since then I have been in love with the products manufactured by this remarkable company. It was always a pleasure to see an AUD 8009/A1 amplifier when visiting a friend's shop. As usual among collectors, after some discussions, a swapping arrangement was made and so, I finally got the complete amplifier set. This was a 25 watt RMS hi-fi amplifier on a sturdy chassis including its power supply and separate preamp control center. The set was sold factory assembled or in kit form. Originally, the amplifier design employed the classic Williamson circuit by using two 807 beam power tetrode output valves. Its output transformer had an extremely wide response characteristic, and its leakage inductance and distributed capacitance were kept to a minimum. The output transformer's secondary winding allowed several speaker impedance connections such as: 3-5, 6-10 and 12-18 ohms.

The power supply consisted of a massive power transformer, a full-wave rectifier 5U4G valve and two filter chokes: 10 Henry @150mA and 30 Henry at 50mA. The preamp section consisted of one 12AX7 and one 12J5 mounted on a floating sub-chassis supported by four rubber cushions in the main amplifier chassis. The remote

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control unit, connected to the amplifier via a cable, featured volume, bass and treble controls as well as a selector switch for radio and phono modes. The remote control center used two 12AX7 and two 12AU7 valves.

Factory Specifications for the AUD 8009/A1:

- 25 Watts Sustained Power Output
- 0,5% @40-20,000 Hz Harmonic Distortion
- 40-20,000 Hz +/- 0.1dB Frequency Response
- Damping Factor 10
- 0.9VRMS for 25 Watts Out Sensitivity
- 330 Watts Power Consumption

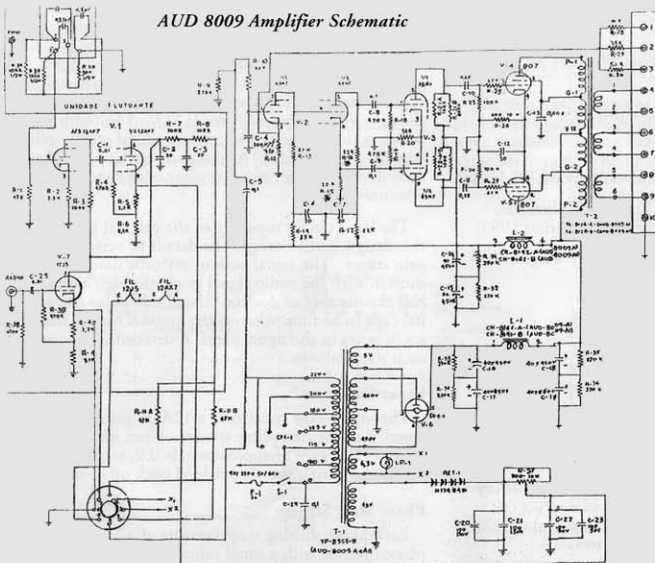
The Restoration Approach

In spite of its age, almost 40 years, the set was not in bad shape. As in any restoration procedure, appearance and electrical performance of the apparatus were considered. On the test bench all components such as capacitors, resistors, etc. were checked and the defective ones were replaced. The same happened with the valves in the set and the two 807s were replaced with a new matched pair.

I needed to make a decision about either restoring or modifying the amplifier. I chose to upgrade the circuit design with the the help of an article entitled "Improving the Williamson Amplifier" by Talbot M. Wright, published originally in the magazine Electronic World, and reprinted in the Brazilian magazine

Antena in 1963. This circuit improvement consisted of changing five resistors to obtain more suitable bias and nominal voltages for the two 6SN7 valves. Regarding the pre-amp, only the volume pot was changed. The other controls were checked and cleaned. I already commented on the set's appearance being in fairly good shape. Only a few scratches in the power amplifier's gray lacquered finish were apparent. It was, therefore, left original to avoid damaging the nameplate during a refinishing operation. The wooden cabinet for the preamp was completely refurbished in order to obtain its original lacquered tone.

AUD 8009 Amplifier Schematic



Amplifier Use and Listening Tests

As mentioned above, model AUD 8009/A1 was

just a high fidelity monoblock power amplifier. Unfortunately, it was not so easy to find another similar unit for assembling a stereophonic amplifying system. I had to audition the amplifier in mono mode with the following system: University 6201 Coaxial 12 inch speaker, FM tuner from FREMO (Brazil Telefunken). As usual, when powering up valve amplifiers, power was applied slowly using a variac. The amp performed well, but some additional work needed to be done to complete the restoration for reliable operation. Upon fixing the set, I found it to perform brilliantly with plenty of headroom, airy high frequency and a tight bass. The sound stage was a little bit limited, probably due to monophonic operation.

Finale

In spite of the great technological evolution, it is quite interesting to note that nowadays many audiophiles believe the audio scene is going in cycles. Old equipment is just as good as the latest stuff. The Model AUD 8009/A1 is a perfect example of this viewpoint. Upon careful technical and listening evaluation it can be considered a piece from the Glory Days, a true classical valve amplifier from the golden era of high fidelity.

Acknowledgements

My sincere thanks to Orlando Galhardi and Guy Lietard for their advice on the Standard Electrica S/A amplifiers. Also to Jario Casoy who kindly helped me to obtain the amplifier photographs.

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About the Author

Carlos Alberto Fazano, Brazilian, holds a degree in chemistry and has published two books on laboratory instrumentation. As a life-long enthusiast of high-quality sound reproduction and a shortwave listener, he studied electronics by assembling valve radios and audio amplifiers. This started his strong interest in the early days of the electronic age. Notwithstanding his daily professional activities, Fazano has always reserved time to study the evolution of electronic technology, and has published several articles in the AWA Old Timer's Bulletin, as well as the English magazine, Radio Bygones.

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