

# Western Electric Listening session of the WE15A

*Sugi:* We are preparing a 43A, 41A, 42A listening session on a separate "vintage speakers" volume. Here the 200A panel is not used, as we have a for low-impedance toroidal output transformer, from the D95659 player. The B+ power supply is adapted to the input voltage of the 43A at 750V.

Originally, the output power tube in the 43A amplifier was the WE 211D / WE211E but this time, vacuum tube used is VT4C of GE for availability and security reasons.

Comparably, 41A and 12A horn is the standard recommendation for small system.

*Shinoda:* 15A horn is also known as the 17A horn.

*Sugi:* The label plate attached to the horn can be of 2 types: 15A and 17A.

In the late 1920's, those horns were known as 15A; it is only during the 1930's that the horns became 17A, with a 7A throat part and a 555 driver. The wood horn itself was the same.

## "The shining star"

*Atarashi:* Benjamins Gigli was the successor of Caruso, tenor of the Metropolitan, and he became a big star.

*Shinoda:* I am surprised. The only good mechanical recordings I heard were recorded in Japan. Sound was good, but here with this great 15A system, sound is wonderful, quite as good as early electric recorded records, the frequency range is wide, voice is vivid and transmitted tremendously. Mechanical recording record is another world.

*Atarashi:* The mechanical electrical sound reproduction system Western Electric (WE) has been studied from the beginning of the radio days. The result was the 4A pick-up head, which pick up sound with same structure as a telephone microphone, As a consequence, it can probably pick up sounds differently than a phonograph would do.

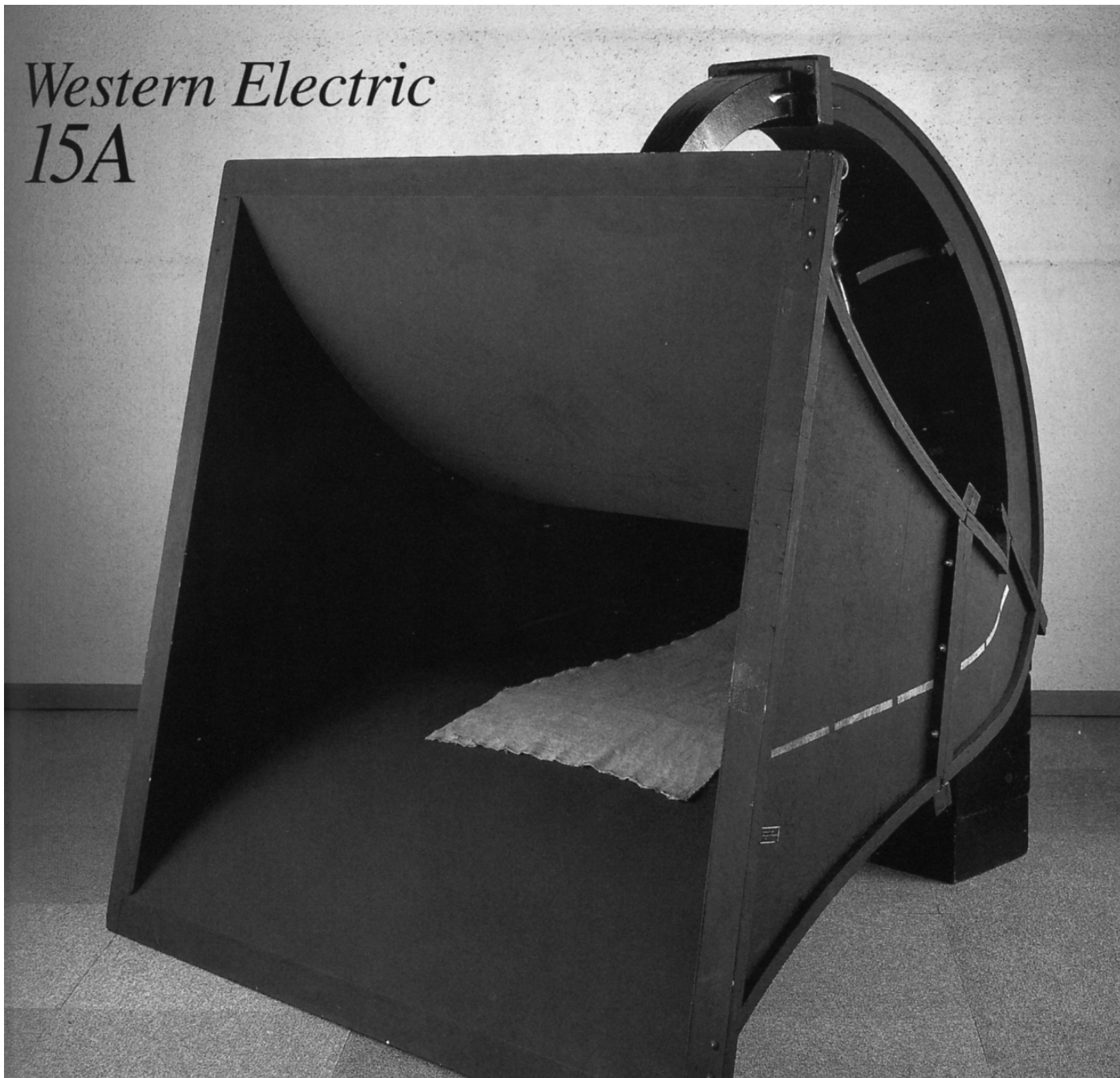
*Sugi:* The 4A pantograph (the part that transmits vibrations to the diaphragm) just picks up the horizontal vibration, but the vertical vibration is almost not picked up. Magnetic circuit inside the housing and diaphragm are damped entirely in oil inside. Even if it does not mean that it will lead to high fidelity sound, the midrange is limited compared to the age of electrical recording. There is no inferiority but with very wide range frequency records, it shows its limit and those records seem quite difficult to reproduce.

Listening to the sound of a mechanical record is phenomenal. Not to blame the phonograph reproduced sound, but when you hear such a sound, even better than the Credenza, which is the best machine for home use, this system is the best professional system.

Next SP record is the performance of Jacques Thibaud, this record is intended to be experimental and side A and B have a different position of microphone; the B side sounds more lively (laugh)



# Western Electric 15A



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## PROFILE

The 7A throat piece is intended for mounting a single WE555 driver, the whole system is then called a 15A, as model plate attached shows. However, the use of 8A throat (555x2), 16A throat (555x3) or 10A throat (555x4) on the same wood part of horn refers to a 17A horn. From the WE555 side, the steel part is divided into two parts, then wood part is also divided into 2 parts. But as the largest part is larger than the door opening, it can also be divided into two parts, depending on the carrying circumstance. This time, the listening was done with that divided mouth wood part.

15A Horn (or 12A, 13A) production is difficult because of the curved wood parts, heavy weight, and width of horn mouth. It required a lot of space in factory, the plywood bending process is special by bending raw wood panels. In fact, the several wood horns have same digit names but are indeed very different from each other. Monitor horn of the same period than the 15A was the 14A and KS6368 for projection room. The production of the KS6368 was much more than the others. (Sugi)



真横から15Aを見る。

Listening to the sound of a 'mechanically recorded' record is phenomenal. The system can play any SP record to give a sound energy that overwhelms the audience.

**"Beethoven: Romance"**

*Atarashi:* Besides the violin, this is the heavy sound of the piano which is so amazing.

*Shinoda:* I think this is interesting, but this is an electrical recording and that changes much compared to the sound and energy of the mechanical recording heard earlier.

*Sugi:* Note that a 7A equalizer has been used to compensate high frequencies, I think the EQ curves and the 4A head is a possible match.

*Atarashi:* 7A has limits in bass, mechanical equalization in the bass frequency is provided by using the heavy tonearm.

*Sugi:* With 4A head and 7A equalizer, this proved a perfect mechanical and electrical match, with a great balance in sound.

**"After you're gone"**

*Atarashi:* Oh, this is a great sound! Guys, to listen to the sound of a record made for the movie projection, I would have went to the cinema house. I am astonished by the difference.

*Sugi:* Surprising because even now, I guess I tried to shock people at the time.

*Shinoda:* This is the sound which money takes.

*Sugi:* M.Ikeda taught us that whichever WE product is concerned, this is the speed of sound rise and fall which is outstanding.

*Atarashi:* the 15A listening session would not have been completed without a band with a horn, as this Satchmo record.

**"Solveig Son"**

*Atarashi:* Satchmo, it's just perfect match for this system. Good texture of the voice comes out from the rich orchestra sound.

*Shinoda:* Nevertheless, energy is incredible.

*Atarashi:* Electrical recording began during those days in Japan. From the age of mechanical recording, Victor and Columbia were established from foreign country and also Polydor.

In addition, in England in 1931, Columbia and HMV mixed to create EMI. First, they develop moving coil microphones and those leads to an improved sound and secondly they had to pay a license to WE, which was expensive. Thus, EMI had the same song with the same artist, recorded on electrical MC system, but fortunately they did not discontinued immediately previous mechanical record, which would have been unfortunate. This is the same song than on the previous record.

*Shinoda:* Naturally, it comes to a new voice presentation.

*Atarashi:* In Japan, Nippon Victor and WE made some recording equipment, but WE did not suit the nippon taste and MC were replaced by British systems.

### **“Sombre Dimanche – Damia”**

*Shinoda:* More and more people commit suicide after hearing this song, that became a real social problem.

*Atarashi:* I like the last chorus.

*Shinoda:* The clear bass sounds far, it is great.

*Atarashi:* With such a sound listening, more people would commit suicide.

*Shinoda:* It is very dark. Nippon records from this time sound better.

*Atarashi:* The quality of the Japan record board had a peak around 1937, then after that it got worse. Listening to this song, we think that nippon recording technology was one of the best at that time. Voice texture of Awaya Noriko is better recorded than this original Damia record.

*Shinoda:* The same Nippon recording, Awaya Noriko “Farewell Blues” is an original Japanese SP I personally have. The final whistle gives us a clear impression of what was recorded.

*Atarashi:* Now in Japan, we would like to hear SP records like that.

### **“Bells of nagasaki”**

*Atarashi:* And after that, it’s time to listen to Japanese SP record, quality is falling. First, quality of the shellac is poor.

What is also different, is the cutting lathe equipment, sound is flat. The midrange has become thin and range is limited.

*Shinoda:* the sound is totally different.

### **“Hibari Misora”**

*Atarashi:* As level is quite uniform, the voice seems real. When sound recording becomes new, you thought that it would not be nice to hear with WE15A, but it is.

*Shinoda:* this is from 1955, beginning of the tape recording in industry.

*Atarashi:* From here, from the SP record playback with WE D86850 record player, we move to CD-R where “my sun bell” has been transferred.

### **“Fairy Dance”**

*Atarashi:* It was recorded in 1937, in the UK. As the cutting machine is provided with a MC cutting head, the American recording is slightly different. The piano sounds firm and secure and the violin is not heard so precisely. It is the kind of recording which emphasizes the delicate impression.

*Shinoda:* Strictly, this person has a great technique.

### “Pablo Sarate: Zigeuner Reisen”

*Atarashi:* This record is from beginning of Heifetz in USA in 1920 when he was 19 year old, this is an earlier record than the first one I heard.

*Shinoda :* This is again a mechanical recording, with an incredible sound.

*Atarashi:* I had to record the sound of those mechanical recordings. The CD-R used a Fairchild MC-type cartridge, 7-stage tube phono amplifier with direct heating tubes and transformers input and output so you finally get this sound.

*Shinoda:* I am sorry that this is not a mechanical record. 15A is an appropriate horn, but it's not like you listening to a real mechanical sound recordings.

*Atarashi:* Then after the time of Narimashi, let's listen to a 1950s record.



### “Tennessee Waltz”

*Atarashi:* Although this SP has been remastered, those who have heard both recorded directly from the CD knows that in general, with speakers, the two versions of "Tennessee Waltz" is not so different.

*Shinoda:* It is quite different: Remastered version shows that echo has been added.

*Sugi:* The 15A was the horn used as monitor during recording.

*Shinoda:* The monitor speaker wasn't good at the time when it was recorded. So it makes sense that the movie was used to monitor this.

*Atarashi:* The sound is quite different from the SP record, including the range and resolution. Today's CD source plays well enough.

*Sugi:* Among users of WE systems, some people listen to SP records and other listen to contemporary CD music. But people who have never heard such a system can think it sounds as an old system. However it sounds the best with SP records but it is usable with any sound source. I started listening to music as a young man and it was also the time of SP records, then comes the time when I defined the sound I liked and the difficulty to get it.

Even if you use a combination of WE equipment, it must sound like this. When it is totally adjusted and tuned to integrate the old equipment, you should get that fresh sound.

*Shinoda:* For example, which recent tube amp can match this system and how would it sound?

*Sugi:* A broadband amplifier to try to play more “wide range sound”, as we heard a rather narrow sound.

*Shinoda:* Now the combination of the 11, but it was really tough records. As the 41A, 42A, 43A is probably not a realistic solution, any advice for a good amplifier for people who uses WE15A horn?

*Sugi:* I think the amplifier 46 with PP of 205D tubes. But otherwise, 41A, 42A would be the amplifier with the same age together with the horn.

**Piano and orchestra are reproduced with a rich sense of body. There absolutely is no feeling of bandwidth limitation. There is also a high resolution which magnifies clearly differences between recordings. The WE15A horn +555 driver can also play today's source sufficiently.**

**Listening to a range of 5 horns:**

- Racon horn made of fabric
- Western Electric 22A
- Ampliton steel curved horn
- Western Electric 14A
- Round Western Electric curved horn

*(This section has not been translated)*

**For the simplest full range playback system, the WE15A is the best horn**

*Atarashi:* Playing a 555 full range gives the impression of a basic style sound. Of course, you can have variation such as multiamp & multiway system... but this is an example of a simple system playing full range. I think this is the main interest of the 15A.

This time, we choose to start from the WE15A and to scale down the size of horn little by little, but keeping the WE555 for each horn. Thus, for me, the difference of sound is not so big.

*Shinoda:* Surely the quality of the WE555 driver shows in every horn. WE15A shows a good example of the bass extension of WE555. On the reverse, other horns do not have as much bass extension, so bass does not come out, but the good voice quality is always present in every horn.

*Sugi:* I expected that the difference between WE horn and others were bigger. The good

A horn made by WE is a huge money investment, for those who wants a polished sound. It is especially true for the 15A and 22A. For a car comparison, horns are general supercars, whereas WE15A and WE22A would be F1 as far as performances are concerned. But it depends how you drive, in some cases it cannot show real performance.

*Shinoda:* For me, it was the first time listening to a WE15A playing full range and I could listen to a sound which was more balanced than I imagined.

Thus, with bandwidth limitation of the systems gathered here, there is no need to add more low and high extension. This is a new fact for me, that if sound is good, there is no need for extra bandwidth extension.

*Atarashi:* it is very difficult to have the WE15A sounding full range. As I haven't heard full range sound so far, it is difficult for me to answer. Also, as a bad amplifier was used, we really try to listen but we cannot properly.

So, the WE15A is felt as a difficult to use horn. Additionally, if amplifier is not of the high class, you can verify that horn would not match.

*Shinoda:* Indeed, just a WE15A and WE555 and it works. Thos well aligned system is difficult to drive properly.

*Sugi:* As we stock this system, we thought you would like the sound (laugh!). About the WE555, sound varies a lot according to diaphragm and other elements.

Unless we use a 41A, 42A and 43A all stage all vacuum tube amplifier, sound is expressed directly. But everything should be fixed and properly maintained.

So it takes a lot of time and money to bring out the quality of each stage and it is much difficult.

15A and 555 is stored somewhere and there were many other getting around it.

When using the 15A with one of the best WE555, sound is very bright and clear. Amp does not have to be the same as here, even a 46 or a simpler one would lead to a sound close as the one we had here.

**The full range playback with the WE555 driver leads to a very attractive sound with any horn it is connected to.**

*Sugi:* WE15A horn as part of a multi-way system appeared in the 1930s, whereas horn itself appeared in 1928. However, since the WE555 is designed to be full range, with an added WE597 tweeter, the fact that cinema engineers at that time removed the treble tweeter, seems to be the most probable.

Whereas WE555 were produced in large quantities over 50,000, the WE 597 was not made in large quantities, only during 2 years. And then, in 1936, the 2-way system based on 594 appeared.

In that sense, the time of use of the WE555 in multi-way system, and the 3-way system consists of TA4151/15A/597 and had the reputation of good efficiency. Once it is installed, it can be kept in use densely for a long time and if it were still there, it would still be used.

*Atarashi:* With other horns than WE15A, dedicated for multi-way system, such as WE22A, there is no discomfort when listening to it full range; it can be a bit hard when listening on axis, but it gives a great sound when listening from off axis.

**WE555 driver has enormous potential A horn made by WE is a huge money investment, for those who wants a polished sound.**

Listen to music with a 22, I've thought that it might sound a bit metallic.

With 15A I here more treble, it came easily without incomfort.

However with the reason where 15A is not good, its difference just little meets my taste.

*Shinoda:* I think that when we called the "horn sound", this one would have been considered as having the most "horn sound" among all.

But it gives absolutely no horn sound, it is very well made. And also, it is just the right size.

*Atarashi:* If you have a gramophone in America, "the English Gramophone, horn made of iron, you will listen to the horn sound", it seems that you cannot verify this preconception. But I think that it means that you have never heard it.

*Shinoda:* If you listen to music, it certainly has the sound of metal, but it is good and it helps carrying out the shine and sparkle of the voice. However WE22A is also good.

*Sugi:* HMV gramophone horn is made of iron, I think the idea was pretty close to the phonograph.

*Shinoda:* The British system is the phonograph, but I do not think it is slow.

*Atarashi:* The Racon Horn made of fabric, it gives the feeling that the ability of the WE555 is reproduced straight without any extra-sound, it is easily good.

*Sugi:* For those who do not have enough space for 15A, this one is recommended.

*Atarashi:* Also the WE14A and the copper one. These were small but attractive. Listening with today standard they are not good enough.

*Sugi:* With a different reference amplifier, it might give a more open and revealed sound.

*Atarashi:* Power amplifier would have considerable effect on sound for sure.

*Shinoda:* I think it is really the case.

*Atarashi:* As WE555 still is a possibility as a driver, this driver is to be always kept and accepted from now on.

*Shinoda:* Even if I do not want to, I now have to end it.

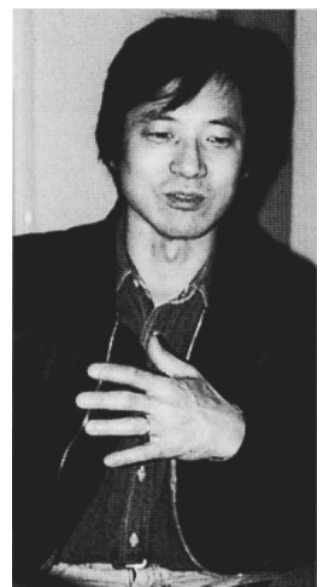
*Atarashi:* Yes. WE 555 for full range or phonograph. And we have not listened to the WE12A, 13A horns yet. There is still many horns I would want to listen to. Today, thank you for this long listening session.



Atarashi Tadashi



Shinoda Hirokazu



Sugi Makoto