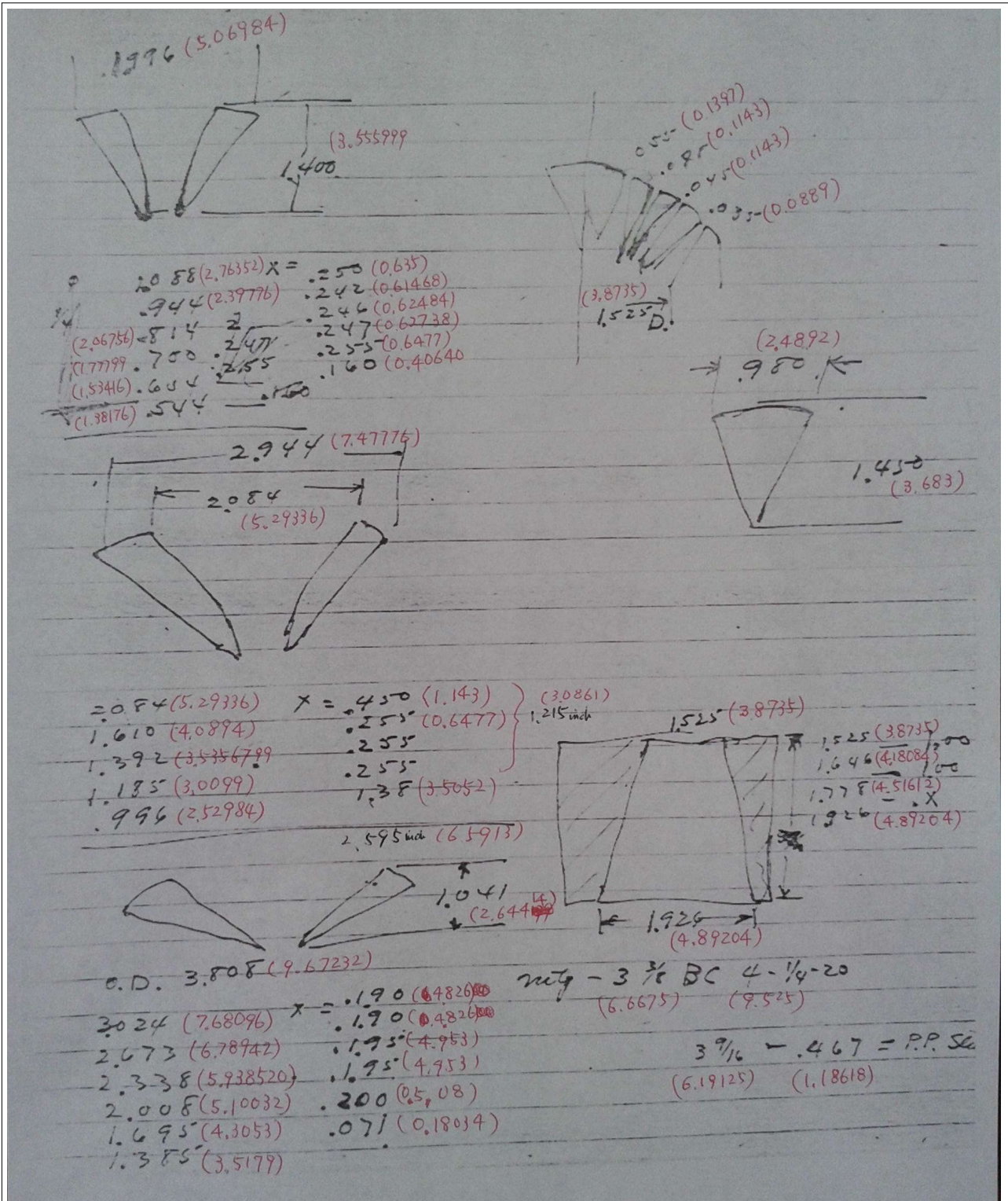
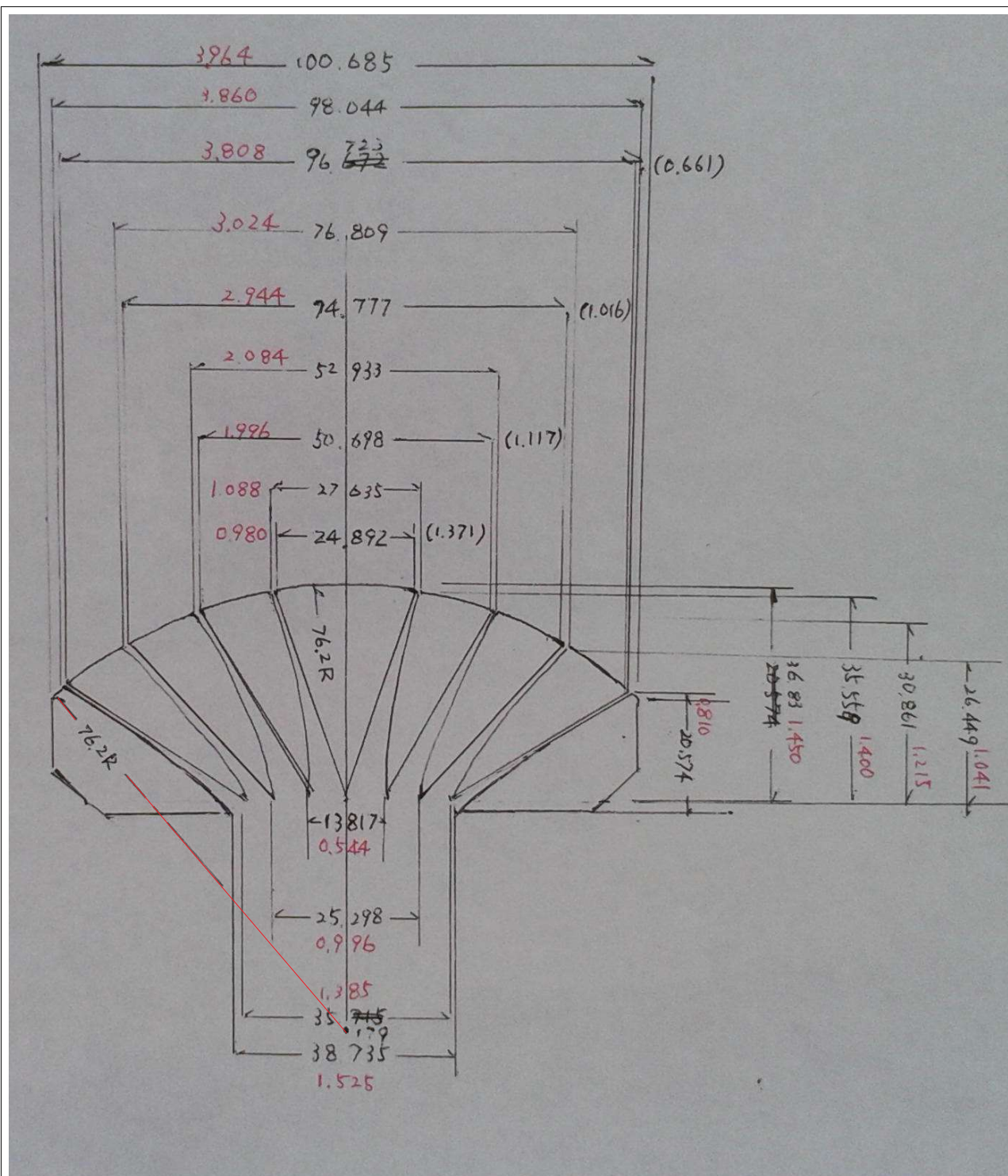


In the previous article Vol.3, Mr. Tim de Palavicchini pointed out that inch should be added to the [LE85] diaphragm diameter in mm. Therefore, I added it to [Mystery of 375] Vol.3 and added cross-sectional views of phasing plugs of [WE594A] and [375]. At that time, I noticed a new difference between the two, so I would like to point it out.

I think it was around 2002, but when I printed and scrutinized a design note for Jim Lansing's 4-inch driver from LANSING HERITAGE, I found out the dimensions of each component in detail. Therefore, I started by reproducing the cross-sectional view in full scale based on the values in this memo.



[Black letters are Lansing letters, and red letters are converted by Fujimori to cm. Based on this number, I have transcribed the following figure.]



[Driver cross section taken from Lansing memo. The unit is millimeter. The red letters are the inches left by Lansing.]

The number I wrote was in inches, so when I multiplied it by 2.54 and turned everything into centimeters, I was able to reproduce 100% of the shape and size of each part from the notes he left behind. The drawings are conveniently drawn in millimeters. The full-scale drawing had the advantage that it could be drawn as-is without conversion. This figure and [WE594A] did not have the same number.

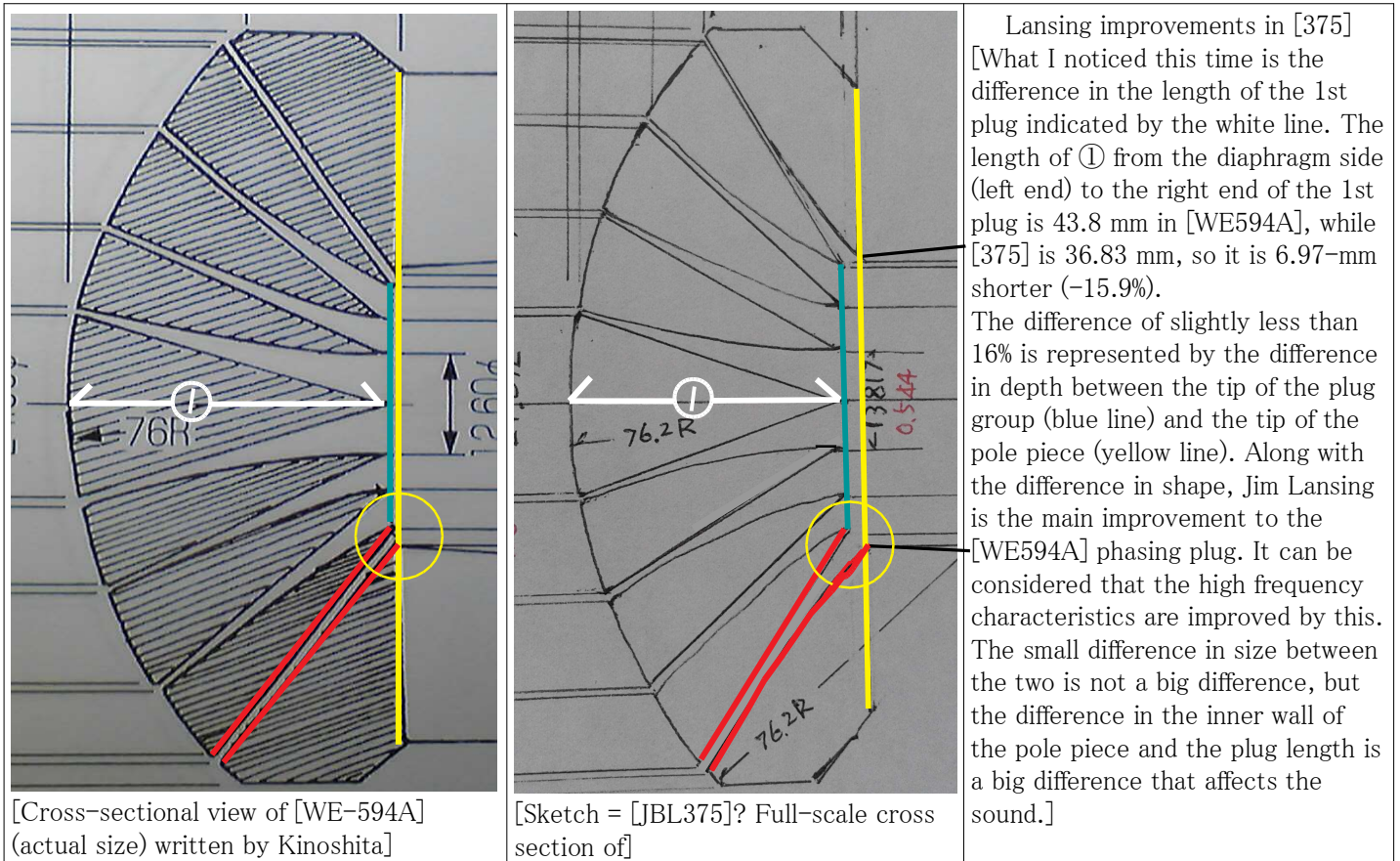
What's more, Lansing writes a sketchy note with up to three decimal places. When I saw this, I intuitively thought that it was not a blueprint of the driver, but a memo of the actual object. Moreover, it was obvious that the magnetic circuit of [WE594A] was not replaced with Alnico 5 because the dimensions of both were different. Then, it can be inferred that the compression driver written in this memo is not a remedy for the flaws of [WE594A], but a new record. Therefore, I compared the two well. The result is the following difference.



First of all, the first thing I did was change the magnification of the copy of the [WE594A] cross-section drawn by Mr. Shozo Kinoshita to the actual size, and reproduce the wrong aspect ratio correctly, the same screen as the sketch reproduction on the right This is what I copied above.

Looking at the figure below, you can see the difference in depth between the two phasing plugs. It can be seen that the distance that the air flow passes through each slit is designed to be shorter at [375]. · ·

The difference between [WE594A] and [375] is that the cross-section of the inner wall of the pole piece indicated by the red line is a straight line or an exponential curve, as was often pointed out in the previous article. The phases of the air flow when they merge at the throat are aligned, but further improvements can be seen in this paper.



Considering the improvements made by Lansing, I think that the fact that the shape of the inner wall of the pole piece has been changed has made it possible to spread the airflow in the same manner as other slits.

Also, by shortening the slit length that was pointed out this time, the air flow will gather in the throat somewhat earlier, so the compression time will be slightly shortened (16%).

Did you expect the effect of shortening the trumpet pipe? .. Is this a change in tone closer to the Flugelhorn than the trumpet?

In any case, you can see that suppleness is added to the peaky [WE594A].

However, in the 1940s, duralumin was a lightweight and strong material in the 1940s, and there was nothing better than this. I think the high range was limited to 10,000 Hz due to the distortion of the 4-inch diaphragm made of duralumin material.

Therefore, Lansing, which 3Way dislikes, may have secretly sealed [375], which he secretly developed. Still, there is a section that was developing the 075 for 3Way for future JBL. If you look at the model number of the device he developed, you can guess the circumstances at that time.

JBL drivers are changing their initial numbers to [075], [175], [275], [375]. The ones modified by Locancy have the LE prefix, and conversely, for consumers without LE, it can be considered Lansing's own work. By the way, looking at the order of release date, it is D175: 1948, T530A / 375: 1953, 275: 1958, LE75 / LE85: 1960, LE175: 1965.

Forty-five years ago, after re-challenging audio with JBL's LE15A + LE85, I began to study the life and achievements of James B. Lansing with mysterious ties. At that time, it was said that he produced most of the speakers that were behind the scenes of a movie screen. However, in 2000, former Mitsubishi Electric

engineer Mr. Tamon Saeki said, "Lansing made the 284 with the technology of a compression driver that was repaired in the subcontracting era of Western Electric." "WE555 and WE594A are Wentle from Bell Labs. "Toulus made and patented it." Because of this, I've been so sad that I couldn't sleep at night. Certainly, the US Patent Office records the names of E.C. Wentle and A.L. Thuras, who belonged to Bell Telephone Laboratory. However, it was a certain common sense for the company that bought the driver prototype to apply for a patent in the name of an employee. So in the 1950s and 80s, audio magazines also published articles in honor of Lansing's accomplishments.

When all of the seniors at that time died, that is, when there were no witnesses, Me. Saeki said, "I didn't listen to audio superstitions or exaggerated stories, and after hard work. In order to bring out the many technologies that were almost buried in the history, we aimed to bring out the technology developed by the company and the materials and patents by the developers themselves, and to dig this out, aiming to bring out many speaker technologies. I wrote the book "100 Years of Speaker Technology" with the concept "I wrote the technical records of the times in the references."

Knowing the story about Lansing that "The Western driver was developed by Lansing," and then dare to bring up the patent record and despise Lansing, there is no word.

It can be said that this is a kind of violence that exploits weaknesses.

He prioritized the patent record, which was just the cause, and repeated the claim to overthrow the true genius, Lansing, which is rare in speaker history.

So I wrote my sentence "James Bullough Lansing".

In January 2020, my friend M recommended that "this research is valuable for future generations, so why not put it on my home-page"?

The sequel reached 20 manuscripts.

In the meantime, there was cooperation such as the collection and translation of materials by Mr. M.

In addition, it has been promoted under a number of collaborations such as proofreading important texts and providing ideas. I would like to thank Mr. M for his kindness, and at the same time, I hope that this sentence will catch the attention of music lovers and JBL enthusiasts.

I wrote this article on Windows 10 using LibreOffice6.0

When viewed at a magnification of 106 on a PC, the size of the drawing is almost the same as the actual size.

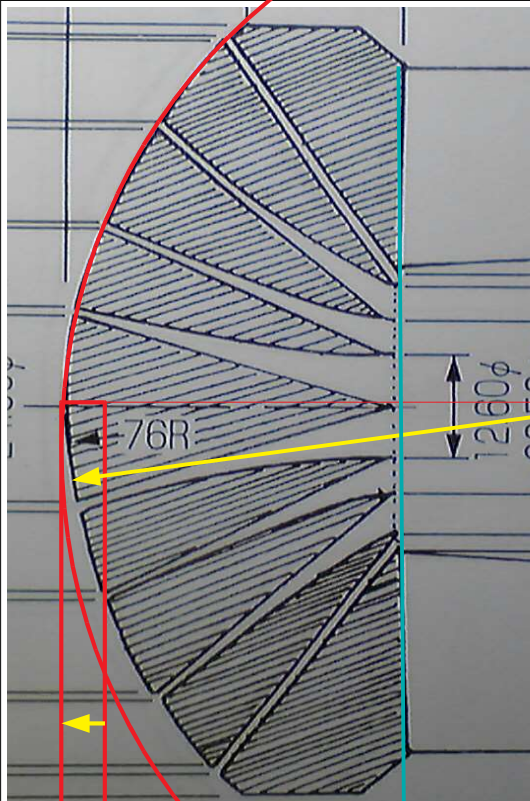
After finishing this article (vol.4) and posting it on Mr. M's home page, a new problem was discovered. I corrected the aspect ratio of Kinoshita's figure on the previous page and extended the figure 5.5 mm in the horizontal direction to obtain the specified plug length, but I noticed that the roundness of the diaphragm surface appeared to change. Therefore, I moved the cross-sectional view to page 3 (next page) due to the drawing, and put the correct red circle of 76R on Kinoshita's figure and overlap it. By extending Kinoshita's figure sideways, the radius of the diaphragm surface (radius) has become smaller. When the figure of Fujimori on the right is applied to this large circle, it fits perfectly.

By stretching the Kinoshita diagram horizontally, the central part is about 3mm higher than it actually is. The diaphragm cross-section radius of [WE594A] is 76 mm, and the specification of the Lansing memo is 76.2 mm which is similar to that, so the curve of the drawing was visibly different, although it hardly changed. So I tried to check how much it was different from the correct curvature, but as a result, the conclusion was drawn that if you put the Paulpie side of Kinoshita diagram about 3 mm forward and follow the red circle, it is the real thing of [WE594A] It was supposed to be a cross section.

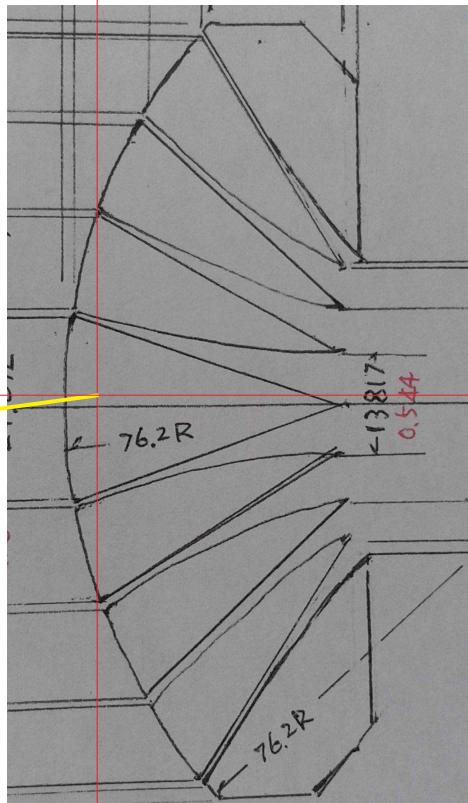
-This figure is probably drawn for the purpose of entering the numerical values measured by Mr. Kinoshita when measuring [WE594A], and it is possible that the aspect ratio was not taken into consideration.

The reason for moving the figure to the next page is that if you add a red circle with a frame over it after drawing it on a PC, the red circle will fly by any means. It disappears or moves to another page. So I was forced to move to the next page.

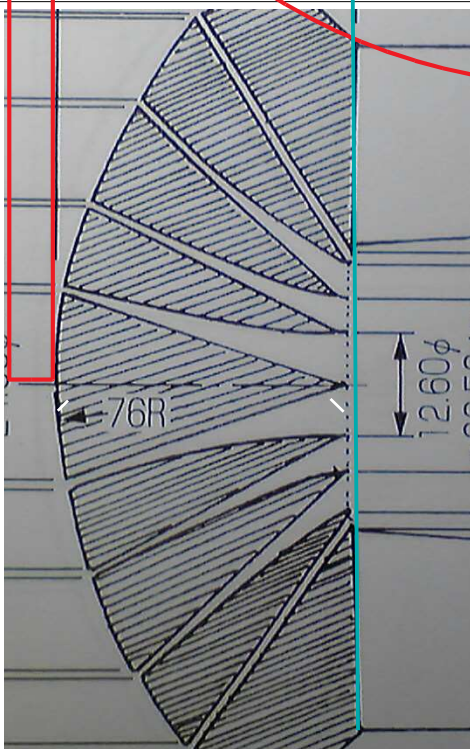




Sectional view of [WE-594A] after modification Drawing by Mr. Kinoshita



From Lansing Design Memo = [JBL375]  
Drawing by Fujimori



Sectional view before modification

The aspect ratio is wrong [WE594A] The cross-sectional view is corrected and the upper one is, and the lower one is uncorrected (red frame can be compared).

However, when a circle with a radius of 76 mm was placed on the cross section, the distortion in the above figure became clear.