

## On Soviet Loglog Slide Rules

**JOS Plus**

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The Soviet standards GOST 5161 for general purpose linear slide rules published in 1949 [6], 1957 [2], and 1972 [7] determine the types of rules that could be produced. Every factory had to obey them; thus, Soviet slide rules made after WW2 are not very interesting. Even though most of the slide rules actually made were of Rietz type, the 1957 and 1972 standards allow production of some loglog models. For example, the 1957 standard shows the closed body model LSLO-250-11 with loglog scales LL3 and LL2. Within the model number, “250” identifies the scale length in millimeters and “11” identifies the total number of scales. For duplex models, the standard lists LSLD-250-14 with LL3, LL2, and LL1 scales and LSLD-125-10 rule with LL3 and LL2 scales. The 1972 standard, revised for the last time as late as June 1984, introduces a plastic closed body model LSLO-250-14P, which was made with the equipment bought from Faber-Castell [2]. There are also new 19 scale duplex models LSLD-250-19 and the plastic version LSLD-250-19P. All the new loglog rules of 1972 standard have three loglog scales LL3, LL2, and LL1. Instead of the common 250 mm scale length the standards allow shorter or longer lengths of 125, 150, and 500 mm for some models. However, these are rare, if made at all. Scans of different models can be studied at <http://www.sliderulemuseum.com/>.

Before the era of standardization, the situation is much more interesting. Till the beginning of the 1930's, the German Nestler, Faber-Castell, and Wichmann slide rules were imported to the Soviet Union in large quantities and slide rule books used these brands as examples. Around 1930, the Soviet Union launched a campaign to make their own calculating devices, including slide rules. Quite a lot of companies started production of slide rules but most of them were not very successful. For schools and for professional use cardboard was often used as material and these rules have not survived very well.

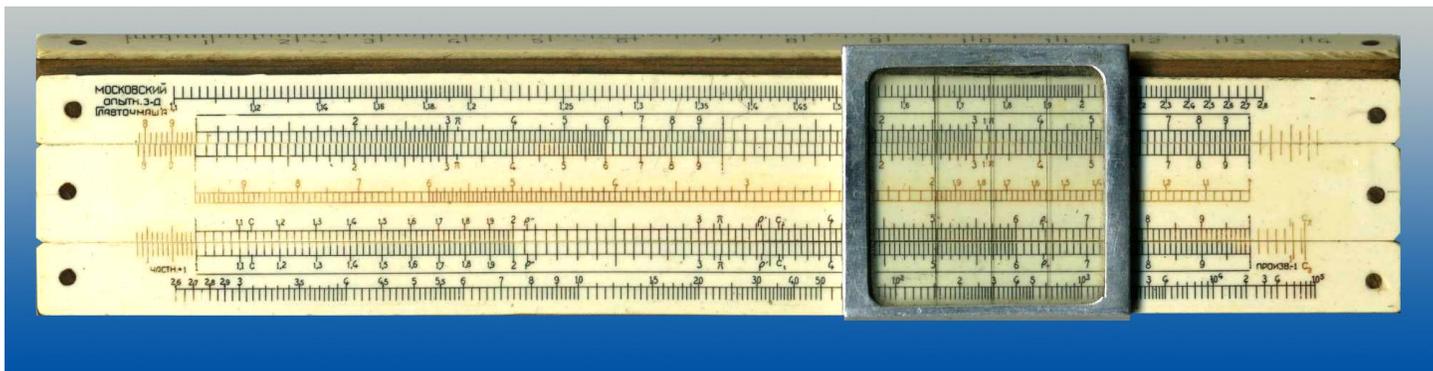
The only Russian pre 1940 slide rule book known to me that considers loglog scales and their use was written by Aleksandr Milovidov in 1932 [9]. Two later editions were published in 1933 and 1934. The loglog chapter is based on the Faber-Castell 378 Elektro rule. Milovidov was the head of the Department of Mathematics at Tomsk Pedagogical Institute in Siberia, but he was shot in 1937 as a victim of Stalin's terror [5].

Let us now consider here two loglog slide rules produced around 1934.

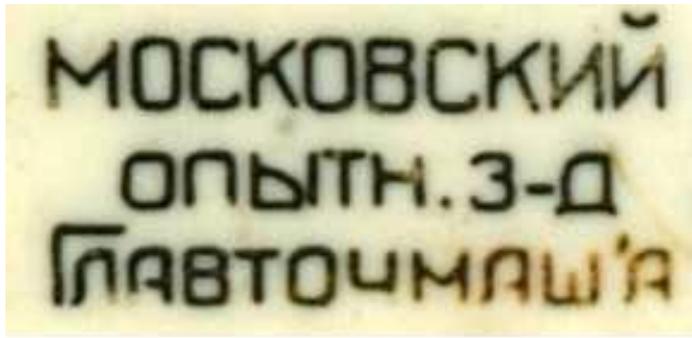
### 1. Loglog slide rule of the Experimental Weight Measure Plant

One of the new slide rule makers was Federal Experimental Weight Measure Plant at Rabfakovskij pereulok 10, Moscow. The plant belonged to the trust Main Directorate of Precision Engineering, which is abbreviated Glavtochmash. The trust was founded 1933. The loglog rule was made with scale lengths 12.5 cm and 25 cm and the former of them is depicted in Figure 1. The arrangement of scales of my 12.5 cm rule is LL2, A [ B, CI, C ] D, LL3 | K // S, L, T, which is identical with Faber-Castell 25 cm rules 352 produced from 1933-1935 and 1/92/392 produced from 1935-1942 [1]. Faber-Castell evidently did not make the short version, even though their 12.5 cm Elektro rule 319 is otherwise analogous with the Experimental plant rule, but has extra scales V and W on the bottom well. The rule of Figure 1 has only a date stamp 2.11.1934 there.

My 25 cm rule is a little bit different and perhaps made somewhat earlier. It does not have K scale at all, only a black color is used in the scales and the tables on the back have been printed on paper instead of celluloid used in the short rule. Both of these rules seem to be of a much better quality than the Soviet slide rules made after 1950.



**FIGURE 1.**  
The 12.5 cm Loglog Rule of the Experimental Weight Measure Plant made in November 1934



**FIGURE 2.**

The logo of the Experimental Weight Measure Plant on the upper left corner of the rule, with text Moscow experimental plant of Glavtochmash

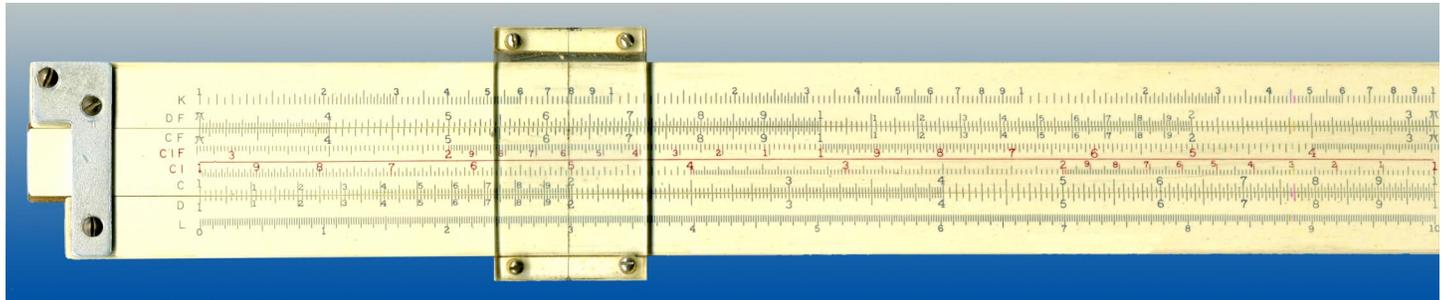
The 7 page manual [8] that came with the slide rule only contains short instructions of use without mentioning different scale lengths or possible other models. The booklet is short, but there is a reference to Milovidov's book [9] described above. The loglog slide rule is called simply the "universal slide rule". Evidently the production duration when the Experimental Weight Measure Plant made slide rules was

quite short.

**2. Soyuz loglog slide rule**

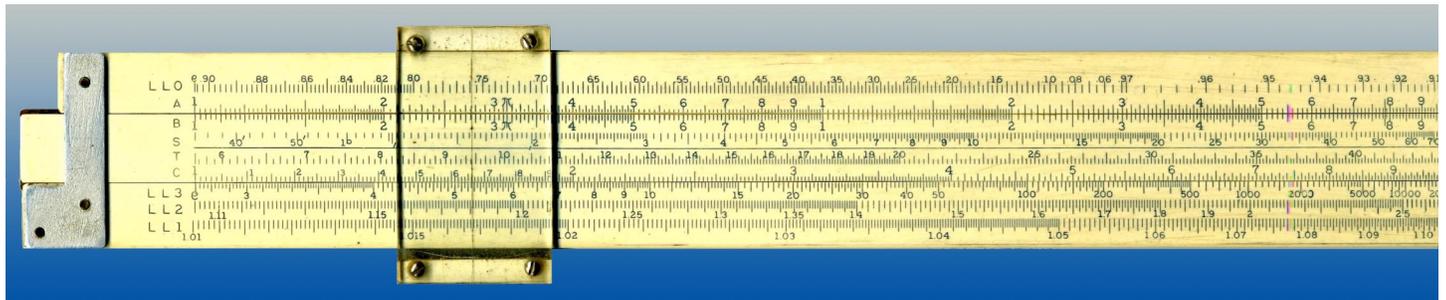
Another loglog slide rule produced in Soviet Union during 1930's is the Soyuz. It was made around 1934 in Leningrad by Soyuz, the first state-owned factory of stationery, school, and drawing supplies named after L. B. Krasin. The factory belonged to the Lenkantspromtrest trust and the factory address was Kurskaya ulitsa 13, Leningrad. According to the factory list [11], Soyuz was founded in 1926, had an average personnel work force of 781 in 1934, and its main products were fountain pens and slide rules.

The arrangement of the scales of Soyuz loglog duplex slide rule is K, DF [ CF, CIF, CI, C ] D, L//LL0, A [ B, S, T, C ] LL3, LL2, LL1. Thus there are 17 scales of which C scale appears on both sides of the rule. The scale length is 25 cm. This rule seems to be a copy of Keuffel & Esser 4092-3. Images of the Soyuz are shown in Figures 3 and 4, and the logo in Figure 5. 10000 copies of the 6 page instruction booklet [4] were printed in 1934, but I am not sure if this number of slide rules were produced.



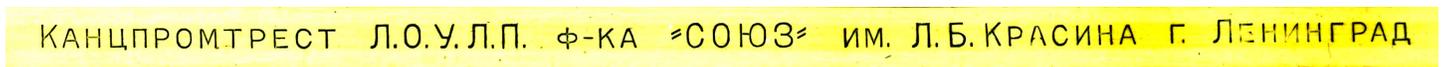
**FIGURE 3.**

Side 1 of the Loglog Soyuz Slide Rule



**FIGURE 4.**

Side 2 of the Loglog Soyuz Slide Rule



**FIGURE 5.**

The Logo on the Edge of the Loglog Soyuz Slide Rule

In the year 1937, the trust containing Soyuz had a new name “School and Writing Instruments Trust”, abbreviation TShPP[10]. By far the most important Soviet slide rule factory of the time was owned by the Latvian cultural-educational society Prometejs and was located in Leningrad. The factory produced Prometej slide rules and slide rule instruction books, but the society was liquidated in 1937. However, the production of slide rules continued with the name SPAR, see [3]. SPAR also joined the TShPP trust and the production inside the trust was reorganized so that Soyuz only produced drawing and writing instruments, etc., but no more slide rules [12]. After WW2 Soyuz again made slide rules during the years 1945-1949, but no loglog models. These simple Rietz type rules were also exported, at least to Finland. In 1950, the SPAR factory, which was evacuated to Tomsk during the war years 1941-1945, began again to make slide rules in Leningrad with a new name “Calculating Instrument Plant”. Soyuz slide rules were then no longer produced, but these two factories were merged in 1972.

#### Acknowledgements

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Petersburg, Sergej Frolov and Evgenij Berezkin for the help in obtaining the information, and David Sweetman for the revision of the language.

#### References

1. Holland, Peter, *Slide Rules*, A. W. Faber A. W. Faber-Castell. *Models, Types, Scales*, Second revised edition, Brühl, 2009, 135 p.
2. Kleine, Karl, *Normen Für Russische Rechenschieber*, 2008, 23 p., <http://www.fh-jena.de/~kleine/rs/tagungen/GOST5161-RST16-2.pdf>
3. Leipälä, Timo, *Soviet Prometei Slide Rules 1931-1937*, 2010, 29 p., <http://www.rechenschieber.org/Prometeis.pdf>

#### Endnote

1. The **JOS PLUS** logo indicates that further information relating to this article can be found on our website <http://www.oughtred.org>. In this case, a Word document with the cyrillic words spelled out. Also, references 4-12, which are in cyrillic, are included in this Word document.

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This award was established to recognize lifelong scholarly achievement in the research, documentation and publishing of articles and books related to the history, evolution, and development of slide rules and other calculating devices.

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