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## A Brief History of the Aristo Studio Slide Rule

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by John Mosand

First, to make it clear: Aristo and Dennert & Pape are the same thing. I have noticed that some think these are two different manufacturers.

### A product name

ARISTO simply became the product name for the company Dennert & Pape in 1936, at which time they began to make all their slide rules from high grade PVC (Astralon/Aristopal). Before 1936, it would be 'DP', 'D&P' or 'DUPA'. Dennert & Pape, founded in 1862, marketed slide rules from 1872 until they closed in 1978. The firm was owned by the Dennert family alone since 1884.

The Studio was Aristo's most successful professional slide rule, with more than 2 million made from 1949 through 1977. It was made in five varieties: 12.5 cm pocket version, 25 cm, 50 cm, a 2 meter demo and an overhead projection model.

### LL Scales

For its history we must go back to the development of two things: the LL scales and the Darmstadt.

In their 1936 catalog, two LL models were listed, the 966

with three LL scales and the 981 with six. The 981 was a continuation of the Yokota rule, which Dennert & Pape made from about 1908. It was of closed frame construction, while the 966 was an open frame duplex.

### P scale

Aristo introduced its Darmstadt model in 1938. One important feature was the P scale, which was applied to the Studio as well as to several of Aristo's subsequent models.

It is an interesting and puzzling fact that the P scale never seemed to become popular among American slide rule manufacturers and users. Although Eduard Oetling's "Simplifying the Slide rule" apparently had instructions for its use.<sup>1</sup>

The Studio seems to have been a merging of the Yokota, the 966 and the Darmstadt.

The first Studio, No. 968 from 1949, had the following scales:

**LL01, LL02, LL03, A/B, L, K, C/D, LL3, LL2, LL1  
T, ST, DF/CF, CIF, CI, C/D, P, S**

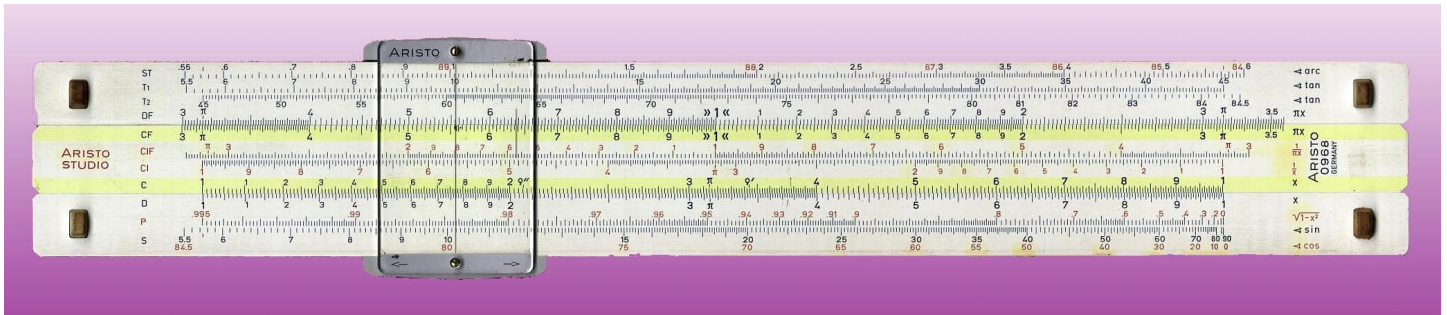


Figure 1. Aristo 0968 25 cm  
Scan courtesy of Mike Konshak at International Slide Rule Museum

The pocket model 868 came in 1953.

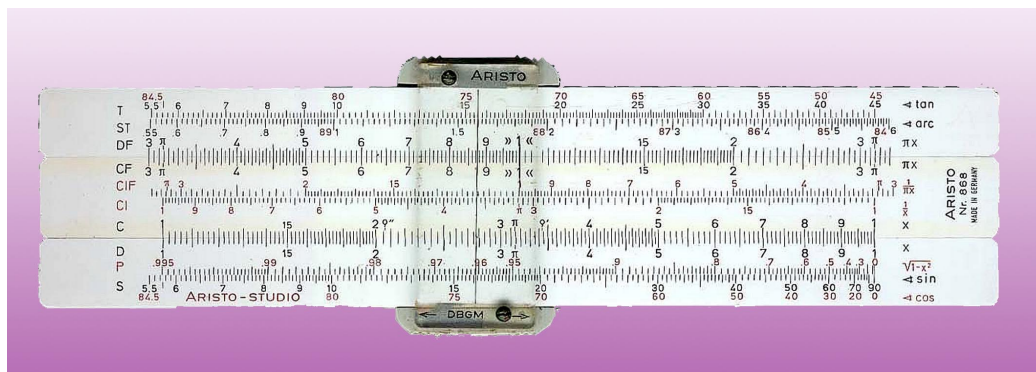


Figure 2. Aristo 868 12.5 cm  
Scan courtesy of Rod Lovett

The 1068 was introduced in 1955 and as 01068 in 1963.

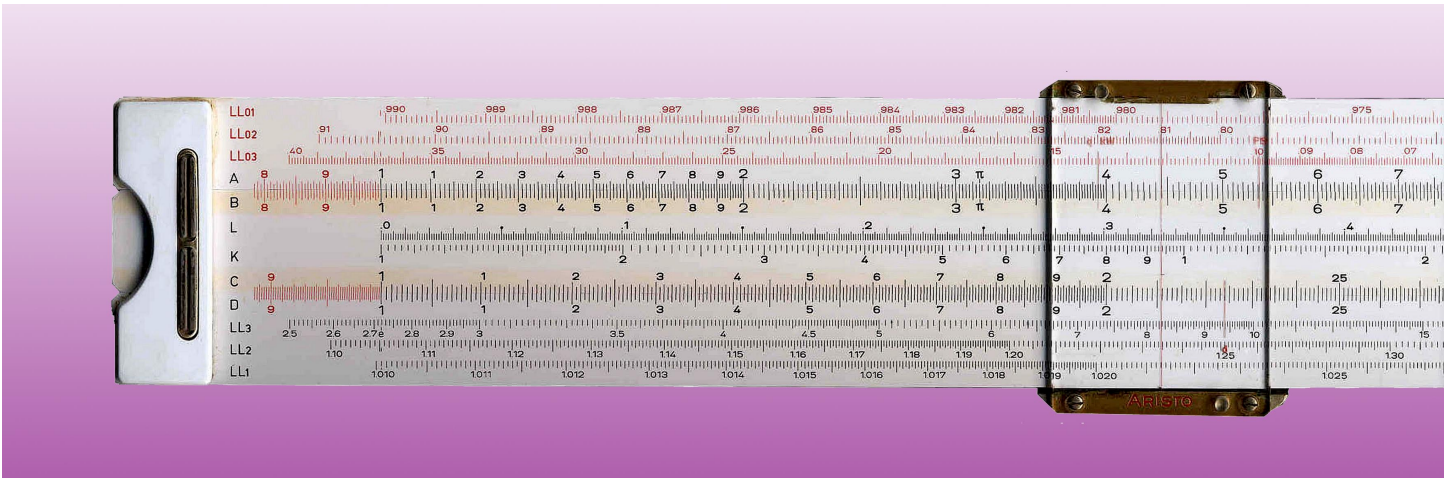


Figure 3. Aristo 01068 50 cm  
Scan courtesy of Rod Lovett

The 168 overhead projection version came in 1964.

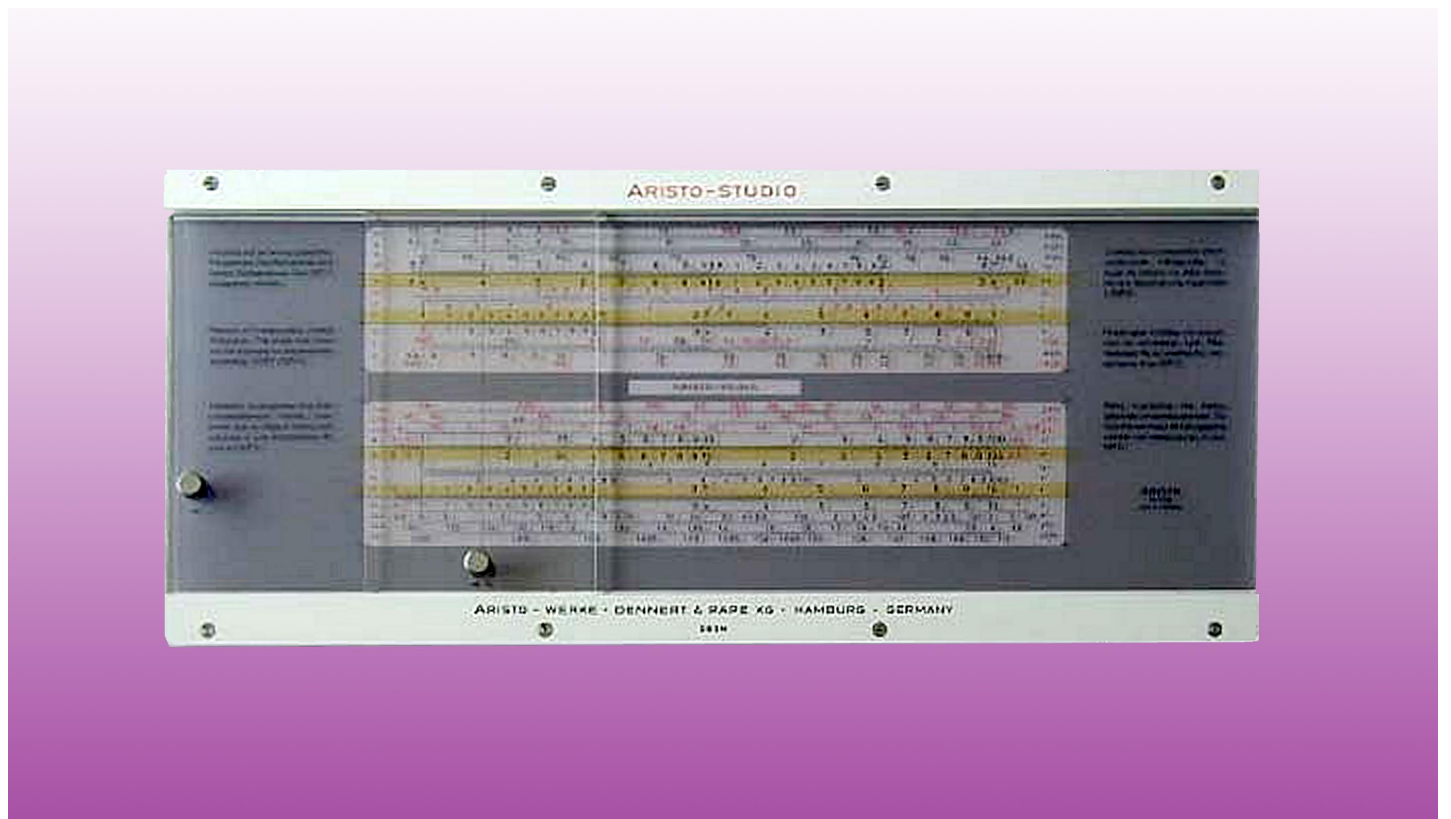


Figure 4. Aristo 168 overhead projection  
Scan courtesy of Rod Lovett

The Classroom demonstration 68/150 came in 1953.

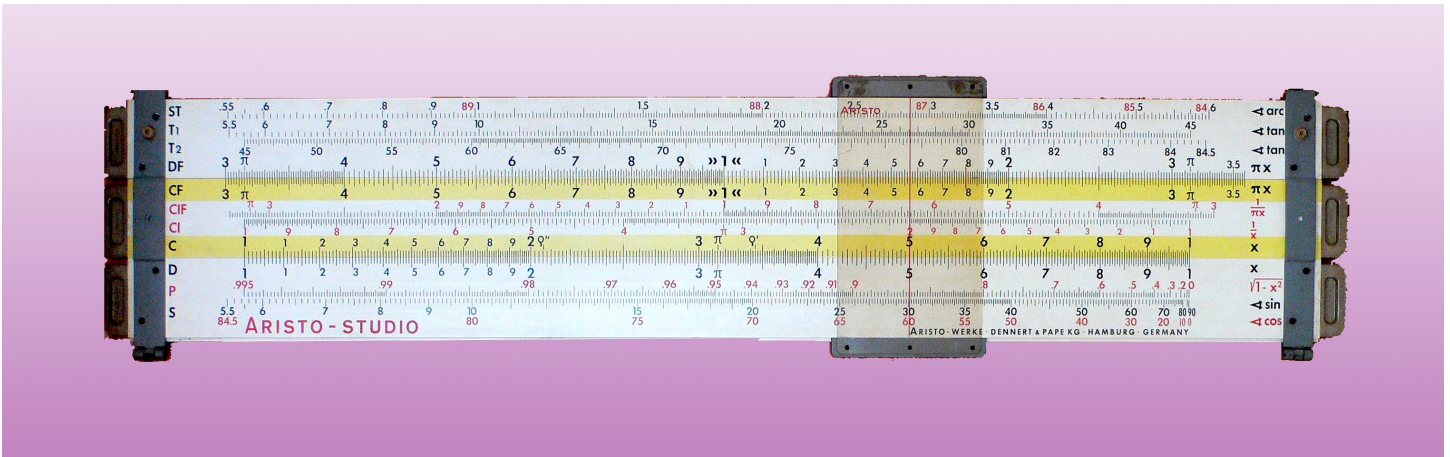


Figure 5. Aristo 68/150 2 meter classroom demonstration

No. 0968 came in 1960 with two T scales (T1 and T2). The first series 968 was 3.5 mm thick; the later 0968 was 4.5 mm, just enough to make it feel stiffer and better in the hands.

My 68/150 is the only demo of which I am aware which was made entirely from the same plastic as the smaller models. Other makers' demos were usually made from painted wood, which was subject to scratching and chipping. The 68/150 also had a snap-hinge attachment that made it easy to flip over on the classroom wall.

### Trig scales

The 968/0968 was offered with trig scales in 360 degree or 400 grad, a choice which D&P offered from 1874 on. The grad or so-called "new degrees" weren't new even then. They were introduced around 1790 by the French, as part of their metrication effort after the revolution, and have been used in most European surveying since. The 360 degree circle was used mostly in navigation and astronomy.

### Cursors

There was a choice of three cursors, a regular flat or slightly curved; with a semi circular magnifier and with a wave shaped magnifier, the last type being clearly superior. A clip-on magnifier was an additional option. Note: the 'slightly curved' cursors were never magnifying, although some sellers claim they are. They were probably intended to reduce bothersome glare from light sources.

The 968 had a cursor that could be opened and removed without tools for cleaning, then snapped back into perfect alignment.

### Extended scales

Like all rules with multiple line cursors, the Studio needed extended scales. These were usually red, to mark clearly the location of the indices. Extended scales were necessary because some of the multiple cursor lines pushed the results a little off scale.

### End braces

Another issue was the end braces. By the end of WWII, Aristo had turned to fixed plastic braces only, convinced that adjustable ones were redundant. "What is adjustable will eventually go out of adjustment." Then they got the impression that the American market might actually prefer them. So they made a series to test that market. It didn't seem to make any difference, and they dropped it. Apparently, Aristo didn't market adjustable slide rules in Europe. The fear that non-adjustable plastic slide rules would eventually wear to the point where adjustment becomes necessary is unfounded. It is always a simple matter of cleaning and lubricating.<sup>2</sup>

### Plastic stands

Plastic stands with rubber tips could be slipped onto each end of a slide rule with the proper end braces.<sup>2</sup> (They don't fit rules with the older type braces.) According to a catalog from 1969, they were then "newly developed".

The stands were then supplied as standard with the 0968 and other high end Aristos of the same dimensions. The 50 cm 1068 had a different solution, thick all rubber 'donuts' which wrapped around the ends.

### Cases

The 868 was delivered in a leather slip case. There was also a choice of a case with a clip, a flap or with a zipper. In Europe, 25 cm versions were delivered in plastic cases, not leather holsters (they were optional). Since they were never worn from the belt in Europe and were carried in brief cases, holsters were less important.

In addition, there was an option of a velvet-lined polished wooden case. There are some indications that a version with linen covered wood was also available. The wooden cases are not very common.

The 0968 plastic cases also had a special slot, containing one of several thin yellow plastic strips with various cm



and inch scales along the edges, lots of conversions factors and scales with NZ (norm-numbers).

### Instructions

The Studios were supplied with a 36 page basic instruction booklet, common to the 868, 0968 and the 1068. A 100 page book could be bought separately, O. Hassenpflug: “Der Rechenstab Aristo Studio”, which was published in several languages. It has numerous scientific explanations for the various functions. Another book, Richard Stender: “Der Moderne Rechenstab”, 130 pages, published independently, was based on the Aristo Scholars and the Studio. It was also published in English.

The Aristo Newsletters, typically 36 pages, A5 format (published in several languages) contained a number of articles about the use of the Studio in various specialized fields. Around 90 issues for different levels were published between 1952 and 1977.

### Copies

The Studio probably was the most copied of all slide rules. (The Rietz and the Darmstadt were regarded as ‘systems’, which were free to be copied.) Some would copy the Studio down to the exact scales, exact scale extensions, cursor lines and even the name! If “imitation is the sincerest form of flattery”, then what is outright copying?

### Hans Dennert’s views

In 1952, Hans Dennert (1926-2000), the last owner of the firm “Aristo-Werke Dennert & Pape”, spent some nine months in the USA and partly in Canada studying production and marketing of slide rules. He was constantly corresponding with his father in Hamburg and had a number of suggestions regarding types and their names.

He expressed doubts about a name like Studio, since some of the better American slide rules have names that tend to describe them. He suggested Log Log Trig for the Studio and suggested for other models, Decimal Trig, Techni Trig, Log Log Super, Log Log Vector, Quadrilog, etc.

They kept the name “Studio”, which was already established, although later models may have been influenced by his ideas: e.g. MultiLog, MultiTrig, Hyperbolog and Hyperlog.

### The end

The success of the Studio was followed by the 0969 StudioLog with eight LL scales and 29 scales total, but that is a different story...

Interestingly, the demand for Aristos continued for a while after other major manufacturers had ceased production. The last Studios left the factory in 1978 when the firm was closed.

### Apparent availability, July 2009:

- Studio 868, pocket: appears fairly often on German ebay.
- Studio 968, 25 cm: relatively rare, although not much sought after.
- Studio 0968, 25 cm: very common, can be obtained at low cost.
- Studio 1068, 50 cm: appears now and then, relatively high price.
- Studio 68/150, demo: very rare.
- Studio 168, overhead: extremely rare.

The scarcity of the last two models is most likely due to the fact that the Studio was rarely used in educational situations, unlike the many Scholar models.

### Notes

1. For more about P scales, see my article in *Journal of the Oughtred Society*, Vol. 13, No. 1, 2004.
2. For more about Aristo end braces, see my article in *Journal of the Oughtred Society*, Vol. 15, No. 2, 2006.

### Sources and references

1. Klaus Kühn / Karl Kleine, editors: *Dennert & Pape ARISTO 1872-1978*, 460 pp, + 2 CDs.
2. *1862-1962 D&P 100 Jahre*, 24 pp.
3. *1872-1972 100 Jahre ARISTO-Rechenstäbe*, 72 pp.
4. Article by Hans Dennert in *Journal of the Oughtred Society*, Vol. 6, No. 1, 1997.
5. Aristo catalogs.
6. Aristo price lists.
7. Aristo bulletins.
8. Conversations with Irene Dennert, widow of Hans Dennert.
9. Conversations with German collectors.
10. My Aristo collection, which covers all the Studio versions.

