

IWAMATIC 1650 AND

THE VÖTSCH-VARIANT

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The way to interesting acquisitions is sometimes surprising and unexpected. The object of this article is the IWAMATIC circular slide rule, Nr.1650, made by IWA, Esslingen, Germany and the variant, based on the same patented construction, made for the Vötsch firm.

In Sammler Journal, Nr.9, Sept. 1990, an article of mine on the history of slide rules, was published.

In the covering letter to the editors I mentioned that I would have a showstand of slide rules on the Collector's Fair in the Jaarbeurs in Utrecht, November 18 and 19, showing 250 items.

This information was added in the marginal line of this article, but not the word "showstand" was used, but "selling stand". This remark was read by a former producer of circular slide rules for advertising purposes. He had finished his firm LOGOMAT in 1983, due to lack of orders, and had still a stock of unsold items of which he would get rid of. He wrote the editors of Sammler Journal and asked for my address. In the letter which reached me some time later, he asked me to sell his stock in my "selling stand".

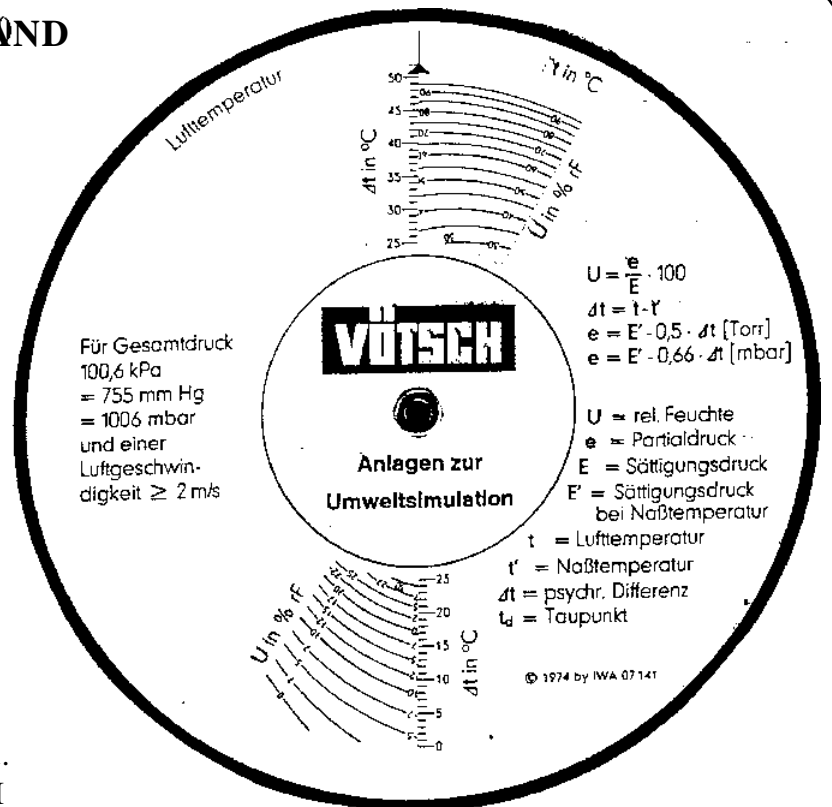
This letter was followed by two visits of me to this gentleman in Germany. The first visit was concentrated on making an inventory of his stock, to see what I could use in my collection and which were the possibilities for swap or sell of the rest. The second visit, some weeks after, was studying the archive of his LOGOMAT firm, to describe the history of LOGOMAT.

The first visit resulted in an interesting addition to my collection and an interesting selling list, which was sent to all Dutch slide rule collectors, known to me. The second visit resulted in an article about the history of this firm Logomat in Sammler Journal, Nr.7, July 1992: Logomat Werbeatikel (and later in the Oughtred Journal, Vol.4, Nr.1, March, 1995)

An IWAMATIC 1650 happened to be in this stock. I never had seen this circular slide rule before, nor knew about it. The particularity is a delay-mechanism, which provides that, turning the innermost ring of three rings, the middle ring turns at half angle speed. This mechanism has been patented by IWA and is called in German: Planetengetriebe.

I had no information about this at the moment I added it to my collection. Later I found a short article in a technical magazine in which the date of first production, 1973, and the price, German Marks 35,-, was mentioned.

In 1995 I wrote to IWA and asked to be able to offer slide rules and circulars, made by IWA



and still in stock, on the First International Meeting of Slide Rule Collectors, which we had organized for November 10, 1995 in Utrecht. They sent many different types for selling, and wrote that still two IWAMATIC 1650 circular slide rules were available for interested collectors. They called these "Oldtimers". The selling price was German Marks 500,- (\pm \$.330,)

At that moment I realized that I had added an interesting item to my collection. Up to now I do not know anyone else who has this IWAMATIC 1650. My astonishment was big when - at the Collector's Fair in the Jaarbeurs, November 11, 1995 - a German gentleman came to my showstand and told me, that he had read some of my articles in Sammler Journal about slide rules, and that he liked to present to me a circular slide rule. It happened to be the IWAMATIC, but now with a special sequence of scales, made for the firm Vötsch, to be used for climate calculations. I omitted to ask him how many had been produced, but I think only a very limited number. As you will understand, a fascinating addition to my collection.

The illustration shows both sides of this Vötsch variant. The front scales are:

- 1: relative humidity U in %
- 2: saturation steam pressure E in mbar.
- 3: airtemperature t in $^{\circ}\text{C}$.
- 4: dew point temperature t_d in $^{\circ}\text{C}$ over ice.
- 5: dew point temperature t_d in $^{\circ}\text{C}$ over water.
- 6: partial steam pressure e in water.
- 7: water content x in $\frac{\text{g}_{\text{water}}}{\text{kg}_{\text{air}}}$ and C , D , D^2 and $1/4.p.d^2$.

The scales at the back side are for t , Δt and U , in the shape of nomograms, based on the Sprungsch-formula:

$$e(\text{Torr}) = E'(\text{Torr}) - 0,5 \times \Delta t (^{\circ}\text{C}), \text{ and}$$

$$e(\text{mbar}) = E'(\text{mbar}) - 0,66 \times \Delta t (^{\circ}\text{C})$$

for 980 to 1033 mbar, at an airspeed ≥ 2 m/s.

The relative humidity U can be determined from psychrometrical difference Δt and airtemperature t .

I wonder if there are members of the Oughtred Society who know these circular slide rules and who have one or more variants in their collections. If so, please write to me.

A comprehensive manual was added to this slide rule. A translation of the German text on page 4 says:

"The Vötsch circular slide rule is to be used for simple determination of the most important features of humid air. It allows a swift and exact exploit of relevant measurements without complementary apply of tables, nomograms etc. At the same time the slide rule aims at exploit of psychrometrical measurements. The relative humidity U is than directly obtained from the values of drytemperature and psychrometrical difference Δt .

All devisions of the Vötsch slide rule are derived from thermodynamic principles. The appropriate sequence of scales on front- and back side leads to a high-class and universal expedient for the practise of the total climate-, air- and drying technic, the gas-, heat- and cold technic, as well as for meteorological purposes.

This patented Vötsch slide rule is a new-development with fundamental extended scale sphere, so that all climates, occurring in modern environment technics, can be determined. Despite the large range of dewpoint, from -40°C to $+100^{\circ}\text{C}$, one obtains a perfect resolution by the circle shaped sequence of scales.

As usual in climate technics, all divisions for pressure-dependent features are calculated for a total pressure of 1013,2 mbar. All scales have been indicated by the new SI-units, because some of the up to now usual units of the climate technics from 1-1-'75 will lose their validity.”

If members of the Oughtred Society like to have a copy of the manual of this Vötsch slide rule (in German language), please write, and I will copy my manual and send it to you.