

FULCRUM

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FULCRUM is the newsletter of ISASC(E), the International Society of Antique Scale Collectors (Europe). It is published in February, May, August and November. Contributions should be sent to the Editor, John Knights.

Air weighs

Back in Edition 20 we featured a piece about Samoan Airlines who were introducing the practice of weighing, not only passengers' luggage, but the passengers themselves. This is considered necessary because of the fulsome dimensions of some of the travellers who were in danger of overloading the small aircraft used by the operator. By assessing the total weight of traveller and luggage the planes can be loaded safely. Charging by the kilogram ensures that revenue is maintained even if the number of 'bums on seats' is reduced.

It turns out that this idea is not as new as I had imagined as back in the 1930s this was being routinely done at Croydon Aerodrome in the UK. Pre-Heathrow and Gatwick this was the airport for London and was the departure point for most of the flights from Britain in those pioneering days.

The aeroplanes of the day were different beasts from the modern gleaming behemoths. They were much smaller, had rather more wings than we would currently expect to see and a deal of external supporting struts and wires.

Passengers, at that time, sat in seats which would today be considered to be suitable only as patio furniture.



Above: A passenger being weighed prior to flying from Croydon Aerodrome in the 1930s.

Left: The scale, like the camera, doesn't lie!

Below: Pre- World War 2 passenger aeroplane at Croydon Aerodrome

Getting into the air was therefore, a somewhat more precarious business than today and the weight of the plane's contents had to be controlled to a more critical degree.



October Meeting.

You will have received details of the Annual General Meeting which will be held on Sunday 9th October at the Best Western Premier, Yew Lodge Hotel at Kegworth.

This will be a significant occasion as 2016 is the 40th year of our Society. Despite the fact that our organisation is reaching an uncertain state because of our declining membership and finances we feel this meeting should be essentially a celebration of the Society and its achievements.

The success or failure of the meeting however will depend on the participation of our members and contributions that they can make to the occasion.

We are asking that people bring along artefacts or documents that they regard as significant and represent what the Society means to them. These can be favourite pieces, rare items that have been found in unlikely situations, pieces that have a value or meaning over and above the intrinsic value etc etc. 'Show and Tell' style contributions about any of the items will, of course, be more than welcome.

We are also looking for presentations from anyone who feels they would like to develop a larger talk or lecture on any topic that fits in with the anniversary theme of the meeting.

This of course will be interpreted with the customary degree of liberality.

We know that many of our members are capable of combining great erudition with a quirky and entertaining delivery so we can hope for good things.

It would be appreciated if anyone who feels able to offer a contribution to the meeting contact a member of the Committee about their intentions so we can efficiently plan the day.

Little Swiss Mystery

People still manage to find us online when they have queries about artefacts that they have acquired. One such person contacted the US Society about a brass quadrant scale and the question was passed on to us (Figs.1, 2 & 3)

The instrument superficially appeared to be a fairly conventional device usually recognised as a yarn or paper scale but the nature of the graduations, engraved on the curved brass chart did present some interest.

The fact that the load carrying element of the instrument was missing made identification even more difficult.

Such information as was engraved on the scale only identified it as being associated with a party called Jacques Guggenheim of Langnau, a village in the Swiss region of Aargau. It was not a name that registered with our knowledgeable European members, and the purpose of the machine was again not readily obvious.

This type of scale, when used for yarn or paper weighing is sometimes graduated in units indicating the weight of a standard length or area of the product under test (Fig 4). Such

scales are usually graduated in weight units with minor subdivisions. The graduations on this instrument are, on the other hand, comparatively coarse going from 5 to 60 by units of 1 and it is not readily apparent what these units are.

There is no indication of grams or other standard units. The only clue is a letter F above the graduated scale (Fig 5).

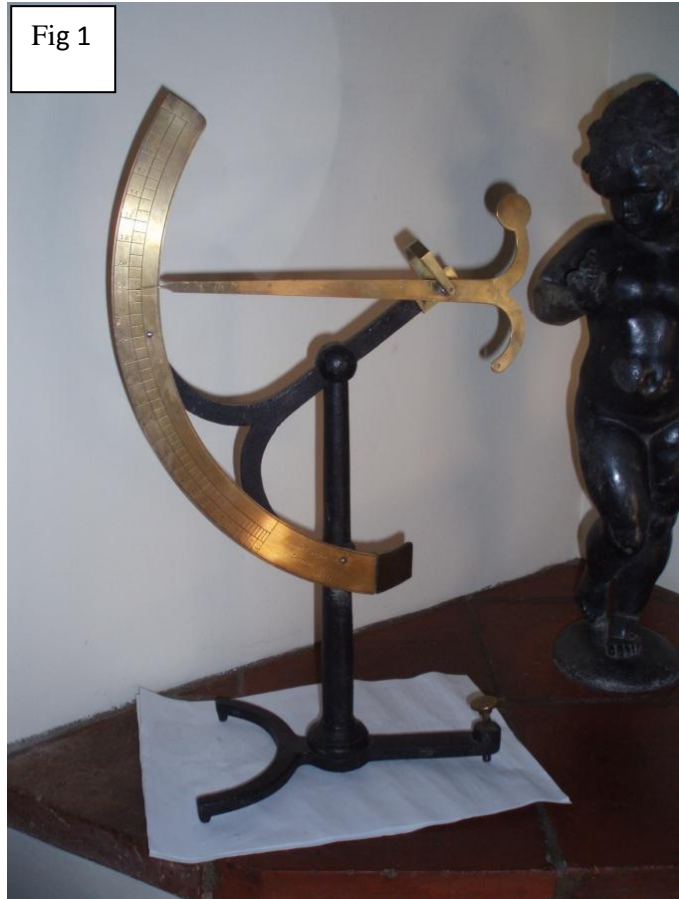


Fig 1



Fig.2

Some information was received, via our European network which took the story a little further. According to a gentleman called Edwin Schellenberg, who has a museum, (www.waage-mass-gewicht.ch) in Switzerland the name Jacques Guggenheim (of Basel) has been found on a yarn testing instrument (Figs. 6 & 7) This is an instrument for testing the tensile strength of a thread. The notched edge of the quadrant acts with a catch on the pendulum to prevent the indicator dropping back when the thread breaks.



Fig.3

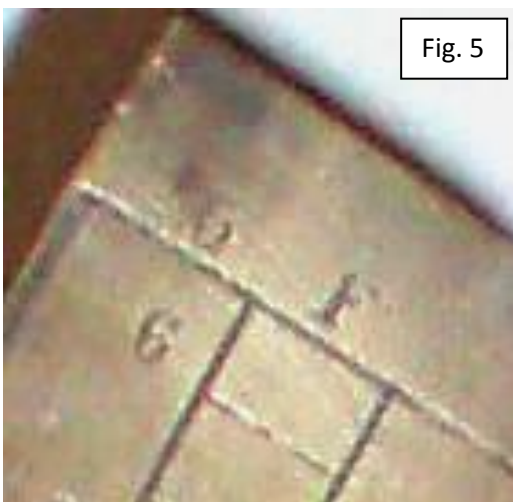


Fig. 5



Fig. 4

In this case the chart is simply graduated in grams (or grammes as shown on the instrument), 0 to 1000 by units of 10 grams. The name also appears on a catalogue for a Torsion Balance, of the type used to calculate the denier value (weight in grams of 9000 metres of thread) of artificial fibres (Figs.8 & 9).

The discovery of equipment associated with what one could call textile Body Mass Index gave a clue



Fig. 7



Fig. 6

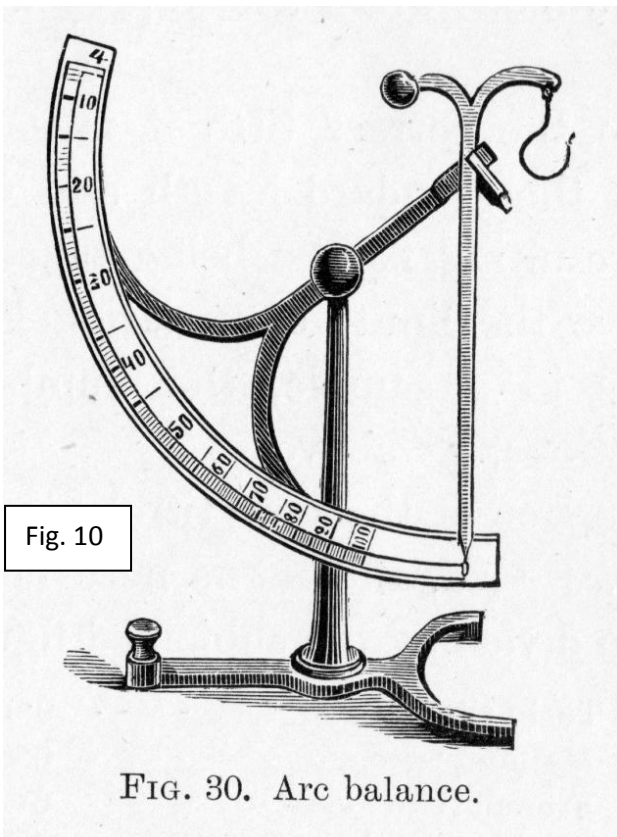


Fig. 10

FIG. 30. Arc balance.



Fig. 8



Fig. 9

to the probable purpose of the Guggenheim quadrant.

Natural fibres such as silk, cotton and wool were classified by reference to rather complicated numbering systems based on either, the weight of a given length of yarn or the length of the fibre that makes up a standard weight. In this second system, the metric version for cotton thread used a reference value of weight of 500 grams and the 'number' represented the number of lengths of 1000 metres that weigh that amount. Thus a cotton thread, of which 20,000 metres weighed 500 grams, would be assigned a number 20.

In the 'English' system for cotton thread the weight unit was the pound and the unit of length was the 'hank' of 840 yards. Thus a cotton yarn with a number of 20 in the English system would have 16,800 yards to the pound.

Similar but different systems existed for other natural fibres. Instruments to measure these values were clearly an essential tool of the textile trade and they would be graduated in simple numerical values without weight units.

The Guggenheim quadrant scale appears to be such a device. An illustration and description of a similar 'arc balance' was found in a 1902 textbook which was calibrated in a similar manner (Fig 10). The metric numbers are also referred to as French numbers in the textbook so we can suggest that the F refers to the metric cotton thread numbers. The graduations on such a device have a zero at the lower end of the chart and the numbers thereafter go in a descending order. The bigger numbers represent the finer threads and the lower numbers at the top of the chart refer to coarse yarns, which require fewer lengths to make up the reference weight. On the picture that our enquirer sent the pointer was in a somewhat impossible position which made the initial assessment of the mechanics of the scale rather tricky. On closer examination of the scale however, the fulcrum looks a little distressed and probably not in its proper state of equilibrium.

Regarding the name Guggenheim, Edwin Schellenberg suggests that he was a dealer rather than a manufacturer so the actual maker of the scale is still a bit of a mystery.

The Shape of Things to Come?



I recently came across this fruit and vegetable trader who has clearly gone back to

basics with his weighing equipment. Maybe there will be a resurgence of such traditional instruments once we float off from Continental Europe.