

SUPPLEMENT TO THE HISTELEC NEWS

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A HISTORY OF HORSTMANN CONTROLS

by John Perkin

A few years ago the Society made a visit to the Horstmann's factory in Bath organised by Roger Horstmann, member, one of the last of the family members in the firm. This was shortly before it moved out of Bath and Roger retired to Cornwall. John Perkin has written this in cooperation with Roger, from whom he borrowed the pictures.

Introduction

I first came across Horstmann's products with their Solar Dial time switches when I was asked to manage the Street Lighting Section of Seaboard's South Kent District from April 1970. Over twenty years later I standardised on the Horstmann 527 for heating control in all of Taunton Deane Borough Council's larger corporate properties. The Old Municipal Buildings had one for each zone. At home a Horstmann 527 operates the CH and DHW running alongside a Maplin Temperature Module with programmable *low level on* for frost and condensation protection and *high level off* to save energy. The Horstmann 527 uses a Ni-Cd battery for back up when the power fails or is switched off. The Ni-Cd batteries deteriorate and fail after several years of use. Originally on failure the units were returned to Horstmann for replacement batteries to be fitted but with the introduction of some un-necessary European legislation this was no longer possible. I then replaced the batteries myself using new Ni-Cd batteries purchased from RS Components.

Chronology

1850 - 1900

Gustav Horstmann, one of ten children, was born in 1828 in Westphalia, Germany where his father was the village schoolmaster. Gustav Horstmann immigrated around 1850 to become foreman of a clock and watchmakers in London and later moved to Bath. At first he worked for local companies before setting himself up as 'Gustav Horstmann, Watch and Clock Maker, and Jeweller'. He married Louisa Knott in 1853 and they had five sons and three daughters.

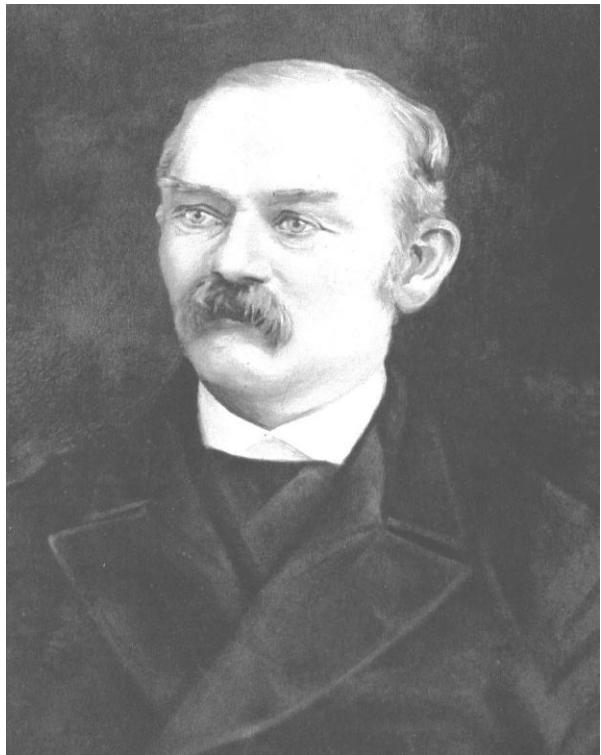


Fig.1 Gustav Horstmann

In 1856 he won a prize 'to devise the most accurate and foolproof device to measure the smallest item'. This was a micrometer able to measure items as small as 1/10,000 of an inch and the original is at the Science Museum.

Gustav patented a device for "a new or improved mode of obtaining motive power, which power can be used for winding clocks, timepieces and other mechanism, and also for ventilating hot-houses green-houses, and all buildings where a uniform temperature is desirable". He made several self-winding regulator clocks using this principle and one is on display at the Museum of Bath at Work. His sons Otto, Frederick, Hermann

and Albert were all apprenticed to Gustav. They were to gain experience later elsewhere in England, South Africa and North America before returning to Bath as the business prospered. Later the company became 'G. Horstmann & Sons'. Gustav Horstmann died in April 1893 aged 64 with around one hundred patents to his name.



Fig.2 Horstmann's Shop in Bath 1900

1900 - 1925

Horstmann's Control Business developing into a thriving retail and clock making business. A clockwork gas controller was introduced for the automatic control of street lighting for the Bath Gas and Coke Company. Foundation of the Horstmann Gear Company Ltd. Sidney designed a gearbox for cars and motorcycles with an infinitely variable gear ratio. The gearbox was not a success, but Sidney went on to make cars in Bath producing about 1500 Horstmann Cars between 1913 and 1929. Around ten of the cars still exist. Production of the gas controllers was transferred from G Horstmann & Sons to The Horstmann Gear Company Ltd. The brothers patented the Solar Dial in 1904 which automatically adjusted lighting times at dusk and dawn throughout the year. See Appendices. Thus frequent visits to every lamp to adjust the time settings were no longer required. It was the start of nearly eighty years of Horstmann's manufacturing involvement in the street lighting controls market. Horstmann started making screw and limit gauges for military production in 1914, becoming a leading UK gauge manufacturer until the business was sold in 1990.

The start of WW1 stopped the supply of German clock movements for gas controllers and Horstmann's developed their own. They were then directed by the government to switch

production to screw and limit gauges for manufacturing munitions. The Newbridge Works was opened in 1915 behind two houses occupied by members of the family. The trade name "Newbridge" was then used on most of Horstmann's products. The company occupied the site for more than 85 years until in 2000/2001 the site was sold for housing.

The post war slump caused diversification into new products such as gardening tools, domestic clocks, mousetraps and cages for transporting and mailing queen bees. The main markets continued in street lighting controls, gas ignition, time switches and gauges. G Horstmann & Son's retail business in Union Street closed in 1925 ending 41 years on the premises and 73 years as watchmakers, jewellers and retailers.



Fig.3 Horstmann's Two Seater Coupe 1915

1925 - 1938

Horstmann continuously developed products to keep ahead. A gas controller which could be replaced in situ without disconnecting the gas supply, controllers for electric lighting, synchronous motor driven time switches and the Comet gas ignition device, which dispensed with permanent pilots on gas lights. The Gas Pistol attached to gas cookers for lighting the oven or cooking rings, which used a battery and glow coil igniter to light the gas. The Distant Gas Switch - a domestic gas switch simulating an electric light switch. It used a battery and a cable running from the door to the light. New patented thread gauge.

The next generation of Horstmanns, Gustav's grand children, became involved in the business. Introduced in 1939 was the first system for timing central heating. Horstmann were leading players in the gauge market, street lighting market, and domestic gas controls market and exported throughout the world.

1939 – 1949

The company was put on a war footing with many products being restricted and gauges prioritised. New War production included the Astro compass, mine switch clock, radio transmitter for aircraft direction finding. Post war restrictions delayed a return to normality for some time.

1950 – 1959

A period of major expansion and the start of Horstmann's electric and gas fired central heating controls. Automatic ignition was applied to cookers. A cooker timer was introduced. The first 'off-peak' electricity tariffs were introduced, creating a huge potential for reliable time switches. Several products for vets were introduced but this product range was sold off later

heating programmer (423 Range) was launched. The gauge operation moved into a new factory. Horstmann purchased Rogerstone Precision Ltd. near Newport, previously a major supplier of components to Horstmann and employment in Bath and Newport reached more than 1,500 at its peak.

Horstmann Australia (Pty) Ltd was formed to assemble time switches locally for controlling 'off-peak' water heating tariffs. Horstmann India (Private) Ltd was formed to manufacture gauges in India. Horstmann became the dominant supplier of time controls for Electricity Boards. Gas and oil boiler manufactures controls were both custom built and branded and also supplied in panels to fit on boilers. Street lighting controls began to take a lower profile in the total activity.

This period marked the peak of the Horstmann family's role in managing the business. Although some non-family directors were appointed, the family always dominated and during this period there were ten family members involved, six of the third generation and four of the next generation.

1970 – 1979

North Sea gas came on stream and all gas appliances in the country had to be converted to operate on natural gas creating a large market for new equipment. Horstmann were asked to supply replacement gas igniters and cooker lighters. The oil crisis of 1973 resulted in the overnight collapse of the oil and 'off peak' electric central heating equipment markets and demand for 'off-peak' time switches slumped and remained stagnant for eight years. Also cheaper Photo Electric Controls competed with time switches for street lighting control.

Aish and Company Ltd. of Poole was acquired, who specialised in marine equipment and this defence business offset the slump in Horstmann's other activities. The Economy 7 Water Heating Control Range was launched in 1979. The original version being based on a 424 synchronous movement and incorporated a clockwork run-back timer boost. It was housed in a Crabtree cooker box and designed to an Electricity Council Specification.



Fig.4 Horstmann's Display at Brussels Fair
1951

1960 – 1969

A period of major expansion - All the Electricity Boards were now selling storage heaters and a range was developed to control the new tariffs. Horstmann were brand leaders supplying nearly half of all the tariff time switches for the next thirty years. Central heating was expanding rapidly with gas, oil and electricity competing. Programmers were then restyled and used to promote the sale of central heating systems to the public such as the Potterton Diplomat and the Centaur. The first purpose-designed central

1980 -1989

This decade saw the recovery of the electric heating market. With aggressive marketing from 1982 the Economy 7 tariff took off and time switches were still the only means of control and Horstmann became one of the major suppliers. The first electronic central heating programmer, the Horstmann 525 was launched in 1984, followed by the Horstmann 527 in 1986. Remote control of domestic electricity tariffs was introduced and Horstmann launched their first radio teleswitch in 1987. Although this product was a technical and expensive failure until replaced by an improved product in 1990. Horstmann acquired a controlling interest in Serck Controls Ltd.

1990 - 1999

The new Radio Teleswitch was developed to overcome the earlier technical and manufacturing difficulties and soon became the market leader. The Centaurstat programmable thermostat was launched with a major contract to supply Eberle in Germany. As senior members of the family retired, the family were to take a decreasing role in managing the company. The Street Lighting Controls business was sold to Royce Thompson in 1991 ending nearly ninety years as a supplier of street lighting controls. After 140 years of family involvement the Horstmann family sold their remaining interest in 1994 and the business and Horstmann Group became part of Clayhithe plc. The ChannelPlus Range was launched and gained a large share of British Gas's business. Clayhithe plc including the Horstmann Group was acquired in 1998 by the measurement and controls group Roxspur plc.

2000 - 2008

In 2000 the business relocated from Bath to new purpose built premises in Bristol with lean manufacturing techniques and some manufacturing functions outsourced. A Management Buy Out was completed in July 2001 and Horstmann Controls became an independent private company. Programmable thermostat's introduced and developed. The new Horstmann website was launched in 2006 allowing the download of product literature and information to assist in product specification. A four channel programmer and a new generation of Real Time Clock Meters were introduced. Horstmann focused on three markets from 2007,

Controls for Central Heating Systems, for Electric Heating; and Utility metering applications. No details have been received from Horstmann Controls of their future plans despite several requests.

Accompanying this article are two Appendices :-

APPENDIX 1

The Horstmann Solar Compensating Dial

APPENDIX 2

The Horstmann Regional Time Map & Time Graph relating to the Regions

Acknowledgement

Roger Horstmann and his wife are thanked for a very warm welcome to my wife, brother-in-law and his partner and myself at their home in Cornwall in April 2008. Also for the loan of several items from his archives, six of which are featured above. Although I had spoken to Roger on the telephone several times over my working life this was the first time that we had met.

Also John mentions that a four page "History of Horstmann's" a reprint from the Gas Times in 1940 can be made available for further reading, but the pictures it contains are not good enough for reproduction here. Please contact the Secretary.