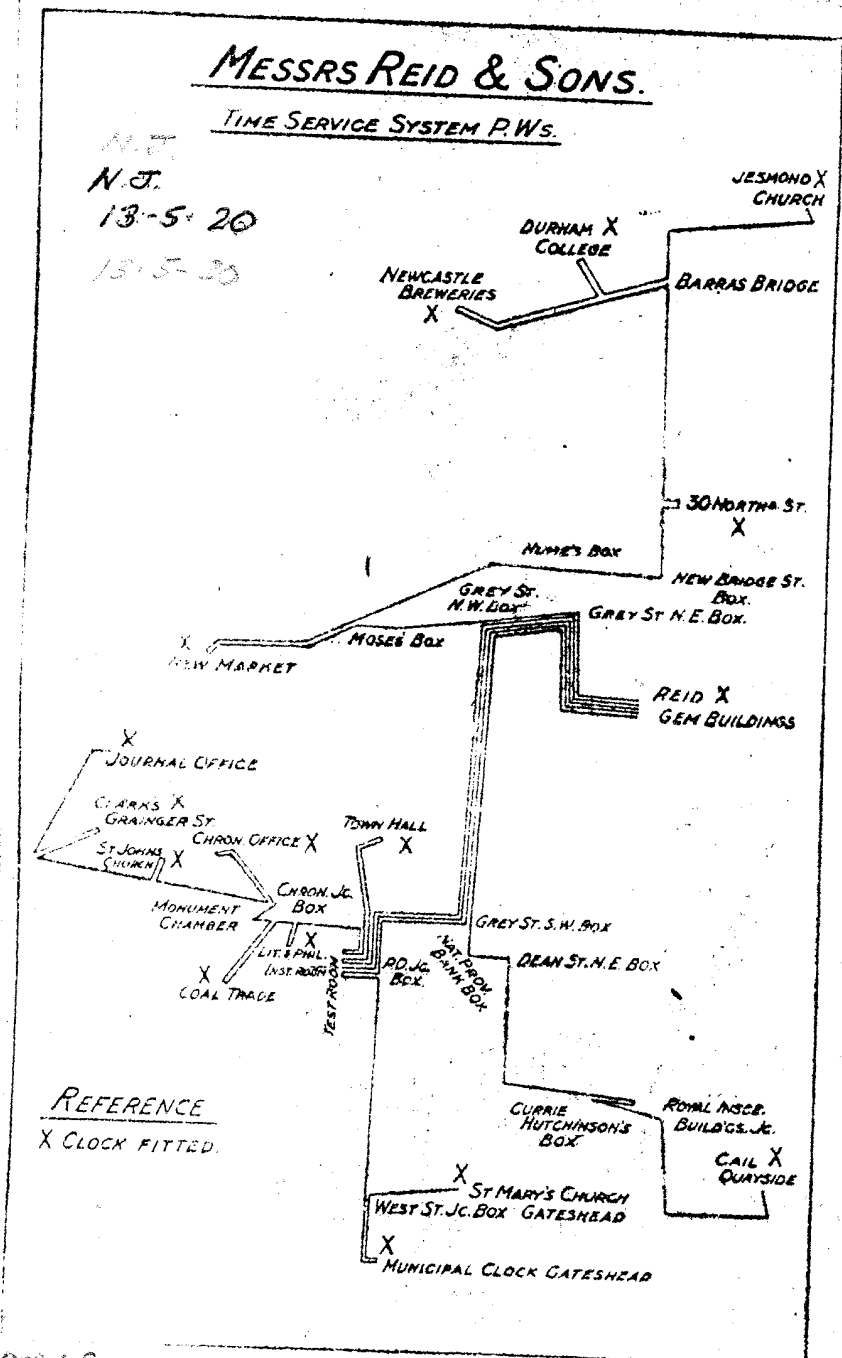


# GREENWICH TIME IN NEWCASTLE AND GATESHEAD.

A Wonderful System of Distribution.



Newcastle-upon-Tyne and Gateshead have the advantage over any other city in the United Kingdom (or in the world as far as we know) of having a widely-spread network of public and private clocks, which give absolutely accurate Greenwich Time to their citizens. This great work is entirely due to the private enterprise of the old and famous Firm of Watch and Clock Makers, Messrs Reid and Sons, of Gem Buildings, Blackett Street, Newcastle-upon-Tyne, who have spent thousands of pounds upon the perfection of this system and installation of its ramifications over Newcastle and Gateshead.

The Reid and sons' system of correct time distribution consists of three distinct departments:-

- (1) The Wireless Time Receiving Station.
- (2) The Master Transmitting Clocks.
- (3) The Controlled Clocks.

The first, the Wireless Time Receiving Station, was suspended during the war, but some months ago was again licensed for service, and is now under the expert supervision of Captain W. H. Loete, N.E. and R.A.F., D.F.C., who has gained his experience in France and Flanders, and who has introduced improvements to render it more efficient in controlling and correcting the Master Transmitting Clocks until their errors, and consequently those of the many public and private clocks under their control, are reduced to a fraction of a second per day.

Greenwich Time signals are received at Messrs Reid and Sons by wireless a few hours each day, and the delicately adjusted Master Clocks have any error immediately corrected and made to send out to the hundreds of clocks under their control absolutely accurate Greenwich Time.

The second part of this wonderful installation consists of two most accurate made and adjusted Master Clocks, with mercurial pendulums "Compensated" against all changes of temperature, and thus ensuring accurate time-keeping. These clocks (one of which is kept as an emergency clock in case of the first undergoing overhauling) is fitted a special and secret system of electric impulse transmitters, which send out every second all over Newcastle and to Gateshead, a correcting current to the clocks under their control. Therefore, the clocks under control are kept at absolutely correct Greenwich time every second, and by another ingenious invention every clock under this unique electric control system automatically reports to Headquarters that it is correct (or otherwise) every hour.

Thus, if a clock is at fault in any way it automatically reports to Gem Buildings and the Electrical Supervisor there has only to glance at a set of dials a few minutes before each hour, as these reports come in, to know that the Town Hall Clock or John's Church Clock (in the centre of the City), or Jesmond Church Clock, or Mary's Church Clock, Gateshead (to take examples of the extreme limits of system), or any one of the many public or private clocks controlled by the system are absolutely correct—or need overhauling.

There are four distinct circuits of wires covering different parts of Newcastle and Gateshead, and over these circuits the Master Transmitting Clocks send out 120,000,000 correcting impulses a year.

Another great advantage of Messrs Reid's "electric control" system is that interruption of the electric current does not cause any breakdown in the control clocks; they continue to go until the controlling current is resumed.

We have now described the wonderfully ingenious arrangements which Messrs Reid and Sons have perfected for receiving by "wireless" absolutely correct Greenwich Time, and for what one may call "storing it."

But not one of the least interesting is the third section of this unique system and that is the net-work of wires for distributing correct time to the subsidiary clocks, and these number hundreds.

The Master Transmitting Clocks, having been corrected by "wireless" send out all over Newcastle, and to Gateshead, electric impulses every second, which control magnets attached to pendulums of all the "controlled clocks" and keep every one at absolutely accurate Greenwich Time. The laying of these scores of miles of wire was undertaken by H.M. Post Office, and the plan illustrated in this article shows their ramifications.

The public can get Greenwich Time—absolutely accurate—from clocks under the control of Messrs Reid and Sons' system from Jesmond to Gateshead at the following Public Clocks:—

Jesmond Parish Church.  
Armstrong College.  
Reid and Sons, Blackett Street.  
New Markets.  
Town Hall.  
Chronicle Office, Westgate Road.  
Journal Office, Clayton Street.  
St. John's Church.  
St. Mary's Church, Gateshead.  
Municipal Clock, Gateshead.

In addition to these, there are controlled a number of semi-private installations such as the Literary and Philosophical Society, the Coal Trades Office, and many private installations, some of them controlling and giving impulses to many subsidiary clocks.

For instance at "The Chronicle Office" the Greenwich Time Clock over the entrance in Westgate Road, besides giving absolutely correct Greenwich time to the public, also controls and works electrically over forty dial clocks in every part of the building, ensuring that every clock is absolutely correct and "synchronized"—an immense advantage when the rush of "publication" is on, and when seconds are of value.

In their own clock outside Gem Buildings, Blackett Street, Messrs Reid and Sons have adopted the "half-minute hand advance." The reason of this is that anyone wishing to set their watch to a correct second can do so. The minute hand of their clock advances every minute and half-minute, and therefore gives the exact second of time at these moments.

During the war the provision of absolutely accurate timekeepers to the Navy was of supreme importance, and Messrs Reid and Sons' success in securing many of the highest awards at Greenwich for their watches was directly attributable to their wonderfully perfect system of timekeepers, enabling them to "time" their watches perfectly, and in the distribution of this valuable asset the public of Newcastle and Gateshead fully benefit.

As an example of private enterprises for the public's use it is unique, and a great public boon.

Thanks are also due to the Corporations of Newcastle and Gateshead, the Churchwardens of the Churches, Associations and Firms who subscribed to Messrs Reid and Sons' system, and through their clocks give the citizens exact Greenwich time.

Whilst on the subject of the use and value of correct time to a community the following note on the origin of the divisions of time will be of interest, especially in view of the adoption of the 24-hour dial on our timekeepers by the Army and Navy to ensure greater accuracy in transmitting messages, a system already in use in some of our Colonies. The note was sent by Mr James Savidge, A.C.I.E., Secretary of the British Horological Institute, to Messrs Reid and Sons' Works Manager Mr S. G. Coulson, and is as follows:—

"The origin of the division of a day and a night into 24 hours goes back to the ancient Babylonians. They divided the day into six parts, each being equal to five of our hours, and the night similarly into six parts. They chose the figure six in accordance with their custom of dividing everything by six or multiples of six, which is the origin of our degree or hour being divided into sixty minutes, and each of these into sixty seconds. In each of the 12 parts of a day and night the sun seemed to move through an arc of 30, the same as the length of each of the 12 signs of the sun's annual course. As the space of two hours was rather a long one, it was afterwards (also before the time of Christ) halved, and thus the day and night of 24 hours came into use."