

## PIERRE LE ROY AND CHRONOMETRY

by

PAUL DITISHEIM, ROGER LALLIER, L. REVERCHON,  
LE COMMANDANT VIVIELLE.

(Review).

This work, published in 1941, is a welcome addition, as regards the developments of French chronometry, to the remarkable and well-documented history published in London in 1923 by Lieutenant Commander R.T. GOULD, R.N. British Navy, under the title: "The Marine Chronometer, its history and development" an account of which was given in "The Hydrographic Review" of May 1924, Vol. 1, N° 2 page 186.

Historical or scientific research work on chronometry has become less frequent since it is so easy to obtain the time more than once a day by W/T. Mariners, however, would make a mistake if they lost interest in the chronometer which is still essential for keeping time between two observations and which might reassume all its former value if wireless telegraphic signals were to be deliberately interfered with, as might happen in case of war.

Commandant VIVIELLE gives first a history of the oldest observing and time keeping instruments, then of the introduction of time pieces and chronometers as well as of the competitions organized by the "Académie des Sciences de Paris" "As to the best method of measuring time at sea", which elicited the creation of remarkable instruments by Pierre LE ROY and BERTHOUD.

Roger LALLIER, in a few well documented pages, relates the humble and hardworking life of Pierre LE ROY, whose father, Julien LE ROY, was himself an eminent artist and clockmaker to the King. Pierre LE ROY, modest, timid, unassuming, was a great innovator and was the first to formulate the principles applied to all chronometers to-day.

Paul DITISHEIM, a swiss chronometer maker who has contributed so much to the progress and fine developments of chronometers' manufacture, is responsible for the main part of the book. He describes the work and trials of Pierre LE ROY, after the efforts of Harrison and Sully, as well as his research work on escapements and the compensation balance, by means of bi-metallic laminated springs, on the conditions of isochronism of the spiral, his various longitude time keepers and his competitions with F. BERTHOUD.

He also shows what progress has been made since, as a result of Ed. PHILLIPS' investigations on the spiral and of Ch. GUILLAUME's on the use of nickel steel in making balances and spirals. This use, while increasing the simplicity and strength of the balance, has made it possible to eliminate the secondary error (Dent's anomaly) which many often complicated devices, had almost vainly attempted to reduce.

P. DITISHEIM has retraced and often quoted or reproduced in facsimile the original memoirs; he also reproduces the maker's drawings. His last chapters deal with the unification of time and the "Bureau International de l'Heure" established at the Paris Observatory. Time determination, wireless telegraphic broadcasting, time keeping by clocks, have now reached an accuracy which makes it possible to initiate a study of the earth's rotation movement variations, such accuracy had been foreseen and prepared by Pierre le Roy's genius.

This magnificent book is also illustrated with very beautiful photographic reproductions, some of which had not yet been published.

P. V.

