

Record

Sam Herrick—An Appreciation

By the death, on 24 March 1974 at the early age of 62, of Professor Samuel Herrick the Institute has lost one of its earliest Honorary Members and the science of Navigation one of its most devoted advocates. Sam Herrick was firstly an astronomer, specializing in the classical fields of positional and dynamical astronomy; his war-time connections with astronomical navigation led him to take a wider interest in navigation in general and, after the war, to take the leading part in the formation in 1946 of the U.S. Institute of Navigation. He was its first secretary and for many years essentially directed the affairs of the Institute from Los Angeles, where he was Professor of Astronomy; he was President from 1952–53. To him rightly belongs a major share of the credit for initiating the bringing together of navigators, scientists, technicians, yachtsmen and many others in the present Institutes of Navigation; and many of them have recognized his pioneering work.

As an astronomer, Herrick was interested in the calculation of the orbits of comets and minor planets by the method known as 'special perturbations'. He 'adopted' the minor planet ICARUS which, because of its eccentric orbit and close approach to the Sun, presented extreme difficulties; he developed new methods and techniques and for many years he, and his students, accepted responsibility for the calculation of its ephemeris. Such methods are the basis for what we now call astrodynamics, a subject which Herrick largely initiated and certainly named; with great foresight he was already planning his definitive work on this subject (see the reviews of his *Astrodynamics* in this *Journal*, Vol. I in 25, 138, 1972 and Vol. II in 25, 540, 1972) in 1952–53 when he spent a sabbatical year at the Royal Greenwich Observatory at Herstmonceux. Apart from his massive scientific contributions to this subject, he has been responsible for generating wide interest in this field and for training numerous students who have applied these methods to practical space navigation. Also, for many years he was a consultant in addition to his professorship at the University of Los Angeles.

Herrick was intensely proud of his ancestor, the poet Robert Herrick. He took a great interest in the English language and his writings are characterized by a close attention to precision of style, expression and grammar. He carried this attention to detail to his mathematics (see, for example, *Astrodynamics*) and devoted much thought and effort to developing consistent notations and treatments. This precision did not prevent him from putting forward original ideas and views—not all of which received universal acclaim. He wrote many papers and articles in the fields of astronomy and navigation, and spoke widely at scientific meetings; his slow, rather quiet, delivery concealed a persistence that was sometimes difficult to overcome, while his occasional dry comments enlivened many a dull meeting.

His later years were dogged by ill-health, and he had to conform to a rigid régime of diet, which however did not deter him from carrying out engagements in many parts of the world. The death of his son, Henry, in Viet-Nam,

which left him disillusioned and somewhat embittered, also adversely affected his health. During leave of absence from his University in the latter half of 1973, he went to see the total solar eclipse of 30 June en-route for the General Assembly of the International Astronomical Union in Sydney in August; he and his wife, Betulia, then returned by easy stages to California visiting many countries, in each seeing many astronomical friends. They visited my wife and me on 30 December, when he was clearly an extremely ill man.

'... , we weep to see
'You haste away so soon.'

D. H. Sadler

Navigation and Maritime Management

A SYMPOSIUM on navigation and maritime management was held in Wageningen between 28 November and 30 November 1973 under the joint sponsorship of the Royal Netherlands Navy and the Technical University of Delft.

Of the nine papers presented, four dealt with the human factor: *Staffing policy in the merchant navy* by G. H. Bast of the Royal Netherlands Shipowners' Association; *Is the position of the captain changing?* by Captain A. Wepster, a Gold Medallist of this Institute; *Authority and leadership on board* by Commander L. J. H. G. Erkens of the Royal Netherlands Navy, and *Higher education in maritime and nautical science at U.W.I.S.T.* by Captain W. Burger, also a Fellow of this Institute.

Rear Admiral G. van der Graaf presented a paper on *Nautical and legal aspects of pilotage*, and H. Schuffel of the Institute for Human Engineering one on the *Ergonomics of bridge layout and instrumentation*.

The remaining three papers were on the more technical aspects of the symposium: a review of *Modern navigation systems* by Lieut.-Commander J. P. van Dam of the Royal Netherlands Navy, which dealt mainly with Omega; *The automation of navigation* by J. H. Mulders of the Amsterdam Nautical College; and *Meteorological routing* by W. D. Moens of the Royal Netherlands Meteorological Institute.