

# FRENCH INFLUENCE ON THE SANDWICH COURSE

BY

COMMANDER A. F. SMITH, R.N., M.I.MECH.E., M.I.MAR.E.

With the growing interest in the Sandwich Course system of education in England in recent years references in the Press concerning the development of this combination of technical education and practical training have appeared, but very little has been said of how and when the scheme was first introduced into this country. In the sphere of naval architecture and marine engineering this appears to have happened nearly one hundred years ago.

There is evidence that by 1860 with the growth of the Steam Navy the technical and scientific educational facilities in the Navy were falling behind the progress of events. The technical developments had brought with them deep-rooted social problems which were to take the Navy and the country a long time before a happy solution was found. The need for higher technical educational courses to enable Admiralty civilian and naval engineers to qualify for the highest technical appointments in the Admiralty was slow in being accepted, but in the early 1860's the principle was being more widely recognized than hitherto—though it would take many years before the first selected students would be qualified by age and experience for those appointments.

Mr. W. H. White (later Sir William), writing in 1874, makes an interesting comment that when the Central School of Mathematics and Naval Construction (the Navy's second School of Naval Architecture) was opened at Portsmouth in 1848 'entry of students was on merit—not upon birth or connection', as though this way of entering a student was something of an innovation. The first School had lasted from 1811 to 1832, and the second School was closed in 1853 after only five years' existence. History records that it was to take a further ten years before higher technical education in the Navy was established on a permanent basis.

In France the social changes resulting from the Revolution probably had to a large extent accelerated a more progressive outlook towards the status of the technical man in the French Navy, but in 1860 in England there were no higher technical educational courses specifically for Admiralty naval architects and marine engineers; and those who saw the need, not only for the Navy but also for industry, looked to the Government to provide the answer.

In March, 1863, three years after the Institution of Naval Architects was founded, Mr. J. Scott Russell, F.R.S., presented a paper before the Institution on the 'Education of Naval Architects in England and France'. The Author had some outspoken comments to make on the lack of technical and scientific educational facilities in the Navy, and deplored the fact that such that had existed had not been open to civilians in industry. Mr. Scott Russell compared this state of affairs with what existed on the Continent where, for example, at the Polytechnic School of France young naval architects, naval officers and engineers from all parts of the world attended for a three-year course, being 'students in winter and workmen in the dockyards practising their craft all summer'.

The Institution, among whose members were many naval officers and naval constructors and a few naval engineers, quickly established a committee with a view to establishing a new school. Representation was made to the First Lord (The Duke of Somerset) and prompt action was taken by the Admiralty. The following year (1864) the Royal School of Naval Architecture and Marine Engineering was opened in Cromwell Road, South Kensington.

Sir William White, when he was the Instructor in Naval Architecture at the Royal School, had stated in the School Annual of 1871 that :-

'The School is for the instruction not only of Admiralty pupils from the Royal Dockyards, and Officers of the Royal Navy, but also of Naval Architects and Ship Builders in wood and iron, Marine Engineers, Foremen of Works, Shipwrights, and other persons desirous of studying Naval Architecture or Marine Engineering. . . .

'The session of the School commences on the 1st of October and lasts till the 30th of the following April. The students are expected to pass the five summer months in practical work, either in a Dockyard or in a Marine Engine Factory, public and private.'

The full course was three years. Not all students enrolled for this period,

but the Sandwich Course pattern of further education and practical training is obvious.

The School at South Kensington was closed in 1873 and transferred to the Royal Naval College, Greenwich. During its nine years' existence 119 students were entered—81 (37 naval architects and 44 marine engineers) were sent by the Admiralty, and 25 naval architects and 13 marine engineers were private students. It appears from the records that when the School was closed all private students had completed their courses, and none were transferred to Greenwich.

The Sandwich Course at the Royal College was based largely on the French pattern ; and although others in England had knowledge of its existence it appears that it was Mr. J. Scott Russell who publicly introduced it to this country for naval architects and marine engineers. It was the Institution of Naval Architects, now the Royal Institution of Naval Architects, who supported such a scheme of training and it was the combined efforts of the Institution and the Admiralty who were responsible for putting it into practice.

The success of the scheme can be judged from the contributions later made by past students to the Royal School and the honours bestowed upon several of them.

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