

for operations. Number One, who was in charge in the absence of Commander Porte, was not a flying officer, but he appreciated the situation, saw the Senior Naval Officer, Harwich, under whose command the operations came, and obtained a tremendous concession from him. This was, that Felixstowe was given permission to carry out anti-submarine patrol on its own, providing that he approved of the general scheme, and was kept informed of the movements of machines.

Our S.N.O. was unlike some other Senior Naval Officers under whose command for operations there were float sea-planes and boats. For some of them did not know the technical and weather limitations, and therefore ordered impossibilities, and when failure resulted, damned the machines and personnel of the Royal Naval Air Service; on the other hand, they would not allow possible operations to be carried out which they had not originated themselves.

In sketching out the campaign from Felixstowe against the U-boats, it was decided that the only sure method of protecting shipping was to damage or destroy submarines, and that all other methods were merely palliative. It was considered that ships proceeding in the shipping lane, which was close to the coast of England and protected by shallow mine-fields and surface patrol craft, were well looked after, and that enemy submarines, if operating in these busy waters, would be so on the alert and keep such a good look-out that the flying-boats would not be given a chance; for submarines cannot be seen from the air when once below the surface of the North Sea. It was therefore decided to expend all available flying time where submarines were to be found on the surface, and that the efficiency of the patrol would not be decided by the number of flying hours put in, but by the number of submarines sighted and bombed.

The Hun submarines streaming down through the southern portion of the North Sea were of the U-B, U-C, and U types—the smallest 90 feet in length, and the largest 225 feet long. They were mine-layers and commerce destroyers, and their commanders travelled on the surface through the Felixstowe area, because the distance they could go under water was only about seventy-five miles, and they could only run submerged at eight knots for two hours before exhausting their electric batteries. And low speeds, say, of two knots, which the submarine could keep for forty-eight hours when submerged—were of no value to an impatient Fritz anxious to get to his hunting-ground. And this was important, as the hundred-mile stretch of water between England and Holland is very shallow, and consequently muddy, and presents a brown and dirty green mottled surface opaque to the eye of the observer in the air.

The exact position of the German submarines was obtained from time to time; for when their commanders