The article on the pages below is reprinted by permission from *United Service* (the journal of the Royal United Services Institute of New South Wales), which seeks to inform the defence and security debate in Australia and to bring an Australian perspective to that debate internationally.

The Royal United Services Institute of New South Wales (RUSI NSW) has been promoting informed debate on defence and security issues since 1888. To receive quarterly copies of *United Service* and to obtain other significant benefits of RUSI NSW membership, please see our online Membership page: [www.rusinsw.org.au/Membership](http://www.rusinsw.org.au/Membership)
BOOK REVIEW

Business in great waters: the U-boat wars, 1916-1945

by John Terraine

Pen & Sword Maritime: Barnsley UK; 2009; 864 pp.; ISBN 978 1 84884 135 2; RRP $49.95 (paperback)

In the 20th century, twice within 25 years Britain was threatened with starvation by the menace of the U-boat. This book aims to identify the key ingredients of submarine and anti-submarine warfare of the first and second world wars. It achieves its aim admirably.

The story is focused in the North Atlantic, where the vital struggles of the war at sea were decided. Some battles from the South Atlantic, the Mediterranean, and Indian Ocean are also included. This focus enables the author to address his contention that submarine and anti-submarine warfare owed almost everything to technology and science in both wars.

John Terraine (1921-2003) was an outstanding military historian noted for his scholarship and writing quality. First published in 1989, reissued most recently in 2009 and readily available online, this book is an enthralling work, despite relatively poor illustrations and maps. It has extensive notes, appendices, indices and bibliographies. The author argues convincingly, displays compelling research, makes judgements that are hard to fault and has persuasive conclusions. His storytelling is gripping.

One of the remarkable aspects of submarine warfare in World War I was the development of imaginative concepts associated with the new technologies then becoming available, including the design of submarine hulls, propulsion systems, sensors (including wireless and sonics), weapons (torpedoes and mines), and the use of intelligence to decide deployments and strategic targeting. Operational concepts also were developed – the idea of the ‘wolf pack’ first surfaced in 1918, enabling by developments such as underwater sound signalling and radio, to co-ordinate submarine operations. While great advances were made on both sides between 1914 and 1918, equally striking was the astonishing readiness in Britain and America between the wars to forget so much, a mistake not made by Germany.

The U-boats were submersibles rather than the near-permanently submerged vessels we know now – the U-boats were locked to the surface and, in most cases, this led to their downfall.

Terraine’s narrative flows engagingly and he strikes a balance of objectivity and fairness. An illustration of this is his discussion throughout of the use of intelligence by both sides; and he gives fascinating examples of the impact of ‘code and cipher breaking’ on theatre and campaign deployments and subsequent battle sequencing.

A feature of the book is Terraine’s descriptions and analysis of the ten or so personalities who had most impact on the outcomes of the wars at sea. The most significant of these was Admiral Donitz. He started in U-boats as a young Oberleutnant zur See in 1916 and finished in May 1945 as Grossadmiral and Fuhrer of the Third Reich. Donitz’s life is woven through the narrative and is a fascinating story in itself: his influence was of fundamental importance to the conduct of the second of the U-boat wars. Terraine gives penetrating insights into factors and events which shaped Donitz’s mind and his decision making.

The first and second U-boat wars, separated by only 21 years and falling within the same bracket of technology, had similarities and contrasts. Operations requiring speed had to be conducted on the surface. Basic tactics in both wars were identical: U-boats knew that if aircraft were in the vicinity then a night approach and attack were necessary. Other similarities included the conditions of life afloat and the submarine’s weapons: the primary armament was the torpedo; and the prime anti-submarine weapon was the depth charge.

The contrasts in both wars are just as striking; first in the numbers, where 1914-18 saw 390 U-boats built, whereas the 1939-45 figure was about 1165. The number of ships sunk by U-boats was substantially larger in World War I: 4837 compared with 2828 in the next war. The tonnage lost to submarines, though, was much greater in the second war: 14,687,231 tons compared with 11,135,460 in the first. The losses suffered by the U-boats were also vastly different: 178 in World War I, 784 in World War II. The human loss in the second war was nearly six times that of the first: 5,409 compared with 27,491 dead, plus 5000 prisoners-of-war – a total of over 32,000; an 85 per cent casualty rate!

The second important difference was that in World War I the U-boats proved incapable of mounting an effective campaign against convoys, whereas they fought most of World War II in ‘wolf packs’. The third significant difference was Admiral Donitz. Steeped in U-boat theory and well-grounded in practice as a sea-going U-boat officer in World War I, he fought the second war with reputation, prestige, and Hitler’s admiration unshaken.

No apparatus for anti-submarine warfare existed in 1914. But the convoy, Room 40, and aircraft changed that. When war came again in 1939, certain elements were waiting: the Operational Intelligence Centre (and Submarine Tracking Room), plus Bletchley Park. There was also Coastal Command, once more there was the convoy, and there was radar.

John Terraine has written a remarkable book: it is well worth reading.

Rob Walls