William Albert Hickman (1877 – 1957)

Albert Hickman was the inventor of the inverted vee planing hull known as the Sea Sled, but much of Hickman's life went unreported. It is believed he was born in Dorchester, New Brunswick, Canada in 1877, but he grew up in Pictou, Nova Scotia, as part of a wealthy shipbuilding family. He gained a degree in engineering from Harvard University in 1899, subsequently becoming a Commissioner of New Brunswick, a lecturer for the Government and a Fellow of the Royal Colonial Institute. He was, also, a successful novelist. He was highly intelligent but, openly, did not suffer fools gladly and was forever irritating his contemporaries in the marine business. This probably contributed to the low coverage of his ideas in the boating press.

There is no doubting, however, that Hickman was a true original thinker and innovator. Along with the Sea Sled, a direct forefather of the modern high speed catamaran, or tunnel hull, he is credited with producing the first surface propellers, working out that they produced lift and, apparently, patenting ideas for lifting strakes, sponsons, anti-trip chines and prop-riding craft. These are all well known and widely used principles today.

In 1907 he built a crude, flat-bottomed, coffin shaped hull named VIPER. She achieved 6.9 knots with a 3 hp engine and 12.4 knots with a 7 hp motor and was much quicker than her local rivals. The success started an obsession which took over the rest of his life and he conducted a number of experiments between 1907 and 1911. Hickman strapped side plates to the similar VIPER II to stop the escape of air and spray from the chines and realised an increase in speed. He concluded that trapping air under the hull was a good principle for fast craft.

Another realisation was the high drag contribution from appendages, and he began experimenting with surface propellers. Although a known theory, it had never been produced in practice. He discovered that this type was also extremely weed tolerant in shallow water and, by added bonus, reduced draught by about 50%. He also produced what he termed 'side plate rudders' in the search for drag reduction. These units were recessed into the hull sides and their trailing edges were alternately pushed out into the flow depending on turn direction. These certainly reduced drag, but were not particularly efficient for steerage.

Over the next two years he considered the problems of pounding when running offshore and in 1913 he launched the Sea Sled at the New York Motor Boat Show and applied for the patent. It turned the establishment on its head, the patent being awarded in 1916. Described as an inverted vee, the craft looked like a normal warped bottom vee planing hull – the type that has the deadrise reducing to zero degrees at the transom – that had been cut longitudinally down its centreline with the two resulting parts swapped side to side and then rejoined along their original gunwales. The craft had two parallel keels at the lower edges of its slab sides and parallel gunwales also.

Support for Hickman and his Sea Sled polarised. There were those who recognised the brilliance and original, practical thinking and were prepared to accept a machine that 'did not look like a boat'. There were many builders, however, who hated the rendering of their own, 'proper' boats obsolete. Hickman's self righteous, arrogant and patronising attitude added to his opposition and alienated some of those, such as magazine editors, who did not directly have anything to lose from publishing articles about the Sea Sled and could, otherwise, have been allies.

Hickman's most productive time for Sea Sled design was between 1914 and 1920. The Sea Sled was faster, carried more load and was more seaworthy than any contemporary small planing craft. It was drier, softer riding and exhibited great directional stability in a seaway. As with all small craft, this performance did depend on the designed proportions being correct. There were some disadvantages; the craft was difficult to turn and to build. Turning could be violent, the craft sometimes digging in and heeling out in a broaching manner after applying helm. This was improved greatly in later craft with the addition of his anti-trip chines along the outer edges of the hull bottom.

The US Navy was impressed and, with the Army, from 1914 until the end of the First World War, purchased Sea Sleds only for its open water fast rescue boats. Hickman, realising that America would probably be drawn into the war, also devised and drew up tactics for using small craft – Sea Sleds, of course – as torpedo boats. He prepared plans for a 54 footer but was unable to sell the idea to the American or British governments. He then privately produced a 41 footer, which impressed all who were at the demonstration, but still did not manage to gain an order. One of the observers, on behalf of the British Admiralty, was Lt. Hampden who later, with two compatriots, managed to get the British Admiralty's sanction for the First World War Coastal Motor Boats (CMBs), the first naval planing torpedo boats.

Although the end of the war stopped development, one of the pinnacles of Sea Sled design came when Hickman was asked to design and build two 55 foot planing aircraft carriers for attacking Germany from the nearby Zuider Zee. These were launched in 1918 and were a great success. With a total power of 1800 hp they achieved 47.75 knots carrying the 10,000 lb Caproni bomber. With the bomber's own engines running the speed increased to 53 knots to allow take off. The aircraft had to land elsewhere, of course!

From this point on, despite the production of many Sleds between the wars, Hickman ceased to innovate and became more and more entrenched in defending his patents against the outside world. The feeling that he was always being unjustly victimised grew. In many ways this was true, as his attitude had made him many enemies in the business, despite support from such luminaries as George Crouch, one of America's most respected inter-war designers. In the 1920s Hickman tried racing to promote his craft but, although usually the fastest, they were not quick enough around the turning marks to win, although they did set a number of records.

In 1925 he went into semi-retirement and leased the building rights to an independent concern. Over the next 10 years more than 6,000 boats were produced, but Hickman had to reclaim the assets when the company failed during the recession. Abortive attempts to interest the American navy in a Sea Sled patrol craft, and constantly coming up against blocking politics, left him more and more bitter,

although he never actually gave up trying to promote the Sea Sled. He passed away in 1957.

American designer Ray Hunt wanted to use the Sea Sled as the basis for what was to become the Boston Whaler, but talks with Hickman in the mid 1950s broke down when Hunt suggested some modifications. Hickman, used to his tight grip on the intellectual property, was probably paranoiac about losing control. Hunt added a central element to the hull and the first 13 foot Boston Whaler was born; a successful company still in existence today.

Lorne F Campbell

Further reading:

‘Damned by Faint Praise’ – David Seidman
Wooden Boat Magazine, May/June 1991

‘The Hickman Sea Sled: The Best High Speed Hull Ever?’ - Dave Gerr
Boatbuilder Magazine – Sept/Oct. 1998

‘Sea Sled Slides Again’ – Dave Gerr
Boatbuilder Magazine - Jan/Feb. 2003