Designed to Dazzle

Annette Wickham

Captain Schmidt at the periscope
You need not fall and faint
For it's not the vision of drug or dope,
But only the dazzle-paint.
And you're done, you're done, my pretty Hun.
You're done in the big blue eye,
By painter-men with a sense of fun,
And their work has just gone by.
Cheero!
A convoy safely by.[1]

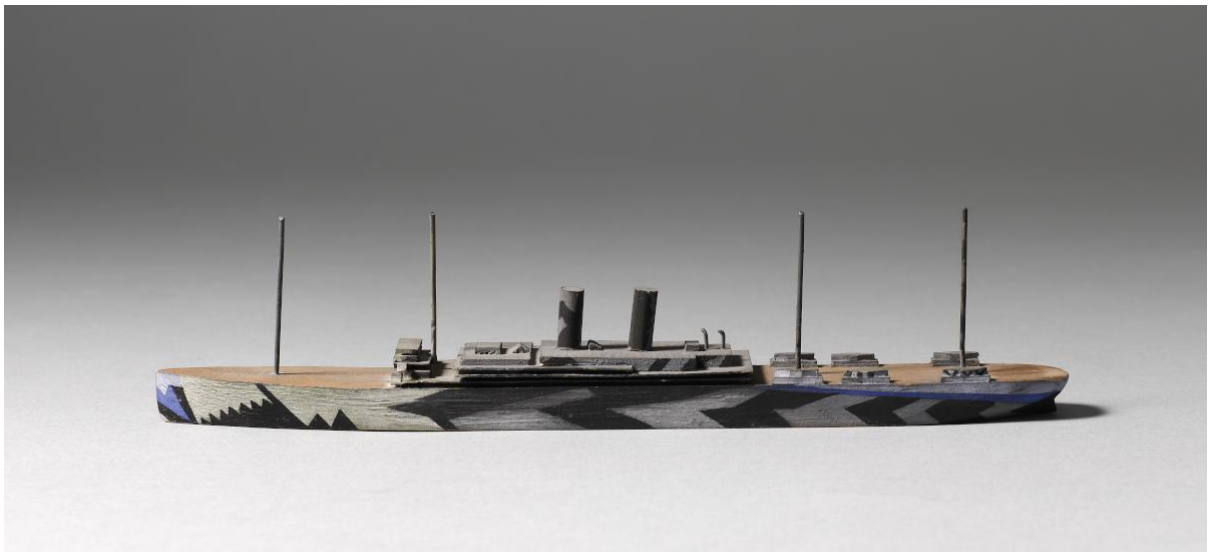

Figure 1: Model ship painted with First World War dazzle camouflage, wood and metal, c. 1917, 57 x 32 x 245 mm RA 04/1455. © Royal Academy of Arts, London; Photographer: Prudence Cuming Associates Limited.

The role of the Royal Academy of Arts in the creation of dazzle camouflage during the First World War is a little-known episode in the institution's history. This pioneering project was put forward by the marine artist Norman Wilkinson (1878–1971), but it was not only 'painter-men' who contributed to its success: the majority of his team were female students from the Royal Academy Schools and other art colleges. A small legacy of their work survives in the RA Collection in the form of two model ships painted in dazzle patterns and a group of striking hand-coloured designs [figs. 1 and 2]. References in the Academy's archive are frustratingly scarce and brief, however, partially because – as the Secretary of the RA made clear in a letter to Wilkinson – the project was considered 'strictly private and confidential' for reasons of security. [2] Nevertheless, by combining the Academy's records with Wilkinson's own account and the work produced by his team, it is possible to build up a fuller picture of the dazzle section's activities at the RA.

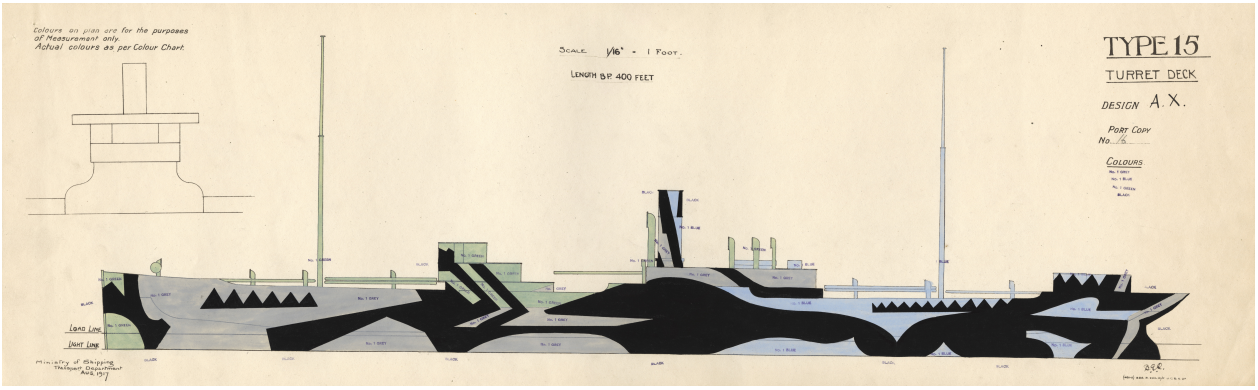

Figure 2: Dazzle design, Type 15 (port side), lithograph hand-coloured with gouache on wove paper, c.1917, 242 x 765 mm, RA 09/1269 © Royal Academy of Arts, London.

Wilkinson came up with the idea of camouflaging ships with highly visible patterns that distorted their appearance, rather than attempting to conceal them, in 1917. He described the flash of inspiration that came to him on a train journey in April that year:

I suddenly got the idea that since it was impossible to paint a ship so that she could not be seen by a submarine, the extreme opposite was the answer – in other words to paint her, not for low visibility, but in such a way as to break up her form and thus confuse a submarine officer as to the course on which she was heading. [3]

Other researchers had already been experimenting with similar theories of visual disruption. These included the American artist Abbot H. Thayer (1849–1921) and the Scottish zoologist John Graham Kerr (1869–1957), both of whom separately offered their services to the British War Office early in the conflict but were declined. [4] Apparently unaware of their research, Wilkinson developed his own ideas independently through his knowledge of art and his experience at sea. His theory differed subtly from those of Thayer and Kerr in that it focused specifically on deflecting the threat from submarines, rather than long-range guns and other weapons, through what he described as 'disguise of direction'.[5] By 1917, German submarines were causing such havoc with vital merchant shipping routes that the Admiralty was more open to suggestion and it was at this point that Wilkinson stepped in with his proposal and the catchy moniker 'dazzle'.

Wilkinson was perfectly placed to put these theories into practice. He had trained as an artist at the Portsmouth and Southsea School of Art, as well as with the marine painter Louis Grier (1864–1920) and in Paris. Before becoming a professional marine painter, he worked for the *Illustrated London News* and as a poster designer for travel companies. With the outbreak of the First World War, he signed up as a Lieutenant in the Royal Naval Volunteer Reserve, serving in submarine patrols and mine-sweeping operations around the UK and abroad. His contacts in both the Navy and the art world opened doors almost immediately. His persistence ensured that he quickly got the official nod from the Admiralty to proceed with trials of dazzle and he solved the subsequent issue of where to carry these out by approaching the Royal Academy. Although not an Academician himself, Wilkinson had regularly exhibited his work at the RA summer exhibition since 1903 (and continued to do so right up until his death in 1971) and knew many of the members. Encouraged by his friend, the sculptor Academician Francis Derwent Wood, Wilkinson spoke to Walter Lamb, the Secretary of the RA, who initially put him off. Undeterred, he went higher up the chain to Sir Edward Poynter, President of the Academy, who happily offered him space in the studios of the RA Schools.[6]

Poynter had always been keen for the Academy to support the war effort and had offered the galleries at Burlington House to the War Office 'for any military purpose for which they might be suitable'.

[7] Since this offer was not taken up, the galleries instead housed the United Arts Force and hosted a series of charity exhibitions. By 1915, half of the gallery space and some of the RA Schools studios were in use by the Red Cross. Space was available because almost all the male students were by then in the armed forces and their classes were formally suspended in March 1916. By this date, however, many of the students were women [fig. 3]. Female students were admitted to the Academy Schools from the 1860s onwards, yet their presence remained controversial even in the early twentieth century. The Annual Report of 1914, for instance, stated that there were no vacancies for female students because they were 'outnumbering the male', a situation that apparently could not be allowed to continue.[8] The First World War soon disrupted this delicate equilibrium and within two years women made up almost the whole student body. In his report for 1916, Andrew Gow, the 'Keeper' – or head – of the RA Schools, reported that their attendance was 'excellent' even though the majority were engaged in 'war work of some sort on alternate days or afternoons'.[9]



Figure 3: Students of the Royal Academy Schools around 1906, gelatin silver print, 162 x 213mm, RA 08/2755 © Royal Academy of Arts, London.

An archive document recording students' activities in 1917 identifies many as Red Cross workers while others simply have 'war work' written after their names. [10] The Red Cross had set up its 'Central Work Rooms' at the Academy, where its volunteers produced supplies for the Front, a venture that even includedspinning dog hair into yarn when wool supplies became short.[11] The names of the women working on dazzle are not specified, perhaps for security reasons, but by Wilkinson's own recollection he had soon co-opted a group of RA students to assist with his experiment. According to an Admiralty memo the team consisted of five male artists appointed as Lieutenants in the RNVR, two 'men modellers', one 'lady modeller' and eleven 'lady clerks for colouring plans of ships'. Within a short time others were

recruited and Wilkinson recalled having 'about 20 girls' on his staff. While the women clearly had a lower official status than some of the men, they appear to have been fully involved in the experimentation process and it is interesting that Wilkinson himself referred to them as 'assistants' rather than 'clerks' and emphasised that they were all specifically 'chosen from various schools of art' [fig. 4].[12] This subtle difference in attitude may relate to the fact that among this team was his future wife, Eva Mackenzie, a graduate of Edinburgh School of Art.[13]



Figure 4: A studio in the Royal Academy Schools, 1917, plate 25 from Norman Wilkinson, *A Brush with Life*, 115 x 177 mm © Royal Academy of Arts, London.

The dazzle section started work at the Royal Academy in June 1917 and the RA Annual Report written later the same year noted that 'the scheme has developed to such an extent that a large staff of draughtsmen and women is employed, and three more of our rooms have been taken', in addition to the two they were originally given. [14] Shortly afterwards, however, a Zeppelin bomb landed on the Academy, [fig. 5] damaging Gallery IX and some of the studios in the Schools corridor below. The Schools were closed until December because of the disruption, but Wilkinson's team seems to have been unaffected: they were back in action by 18 October, when they welcomed King George VI, who is reported to have been duly 'dazzled' by the new form of camouflage they had created.[15]



Figure 5: Gallery IX, Burlington House after the explosion of a German bomb, c. 24 September 1917, black and white photograph, 288 x 238 mm, RA 08/1937 © Royal Academy of Arts, London.

In his autobiography, *A Brush with Life*, Wilkinson gave a detailed account of the experiments he carried out at the Academy, making clear the role played by his assistants.

A small wooden model was made to scale for each of the thirty-seven types of merchant vessel and a design was painted on it. The model ship was then carefully studied in a mini-theatre constructed in Wilkinson's office at the RA, where it was placed on a revolving turntable and viewed through a submarine periscope with various different sky backgrounds behind it. The aim was to create a design that produced

'maximum distortion' [fig. 6]. As a result of this process, Wilkinson and his team decided that the most important parts of a ship for creating visual distortion were around the bridge, where submariners would look to determine the ship's course [fig. 7]. The colours they found most effective were combinations of black and white with shades of blue and green, while sloping lines and curves worked better than verticals [see figs. 2 and 6]. The group originally tried out 'violently contrasting colours', but found that these were less useful, partially because German U-boats started using a colour screen in their periscopes that reduced the effect of bright colours. [16]

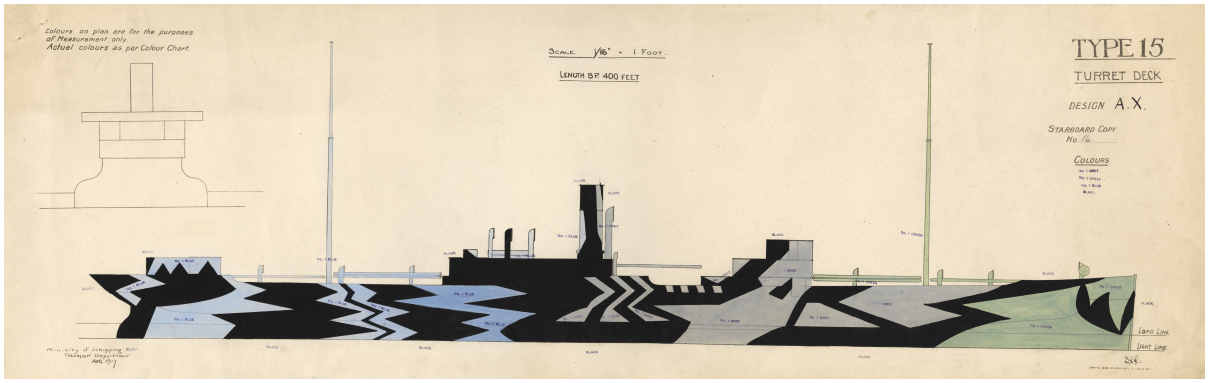

Figure 6: Dazzle design, Type 15 (starboard side), lithograph hand-coloured with gouache on wove paper, c.1917, 240 x 761 mm, RA 09/1264 © Royal Academy of Arts, London.

Alterations were made to the model ships and once Wilkinson and his team were satisfied, the resulting design was transferred to 1–16-inch scale plans that showed both the port and the starboard side. Each hue used corresponded to official colour charts –'a factor essential to the success of the scheme'– as is evident in the examples that have remained in the RA collection [figs. 2, 6 and 7]. The hand-coloured lithograph templates were then passed to the main shipping ports, where artists, including the Vorticist Edward Wadsworth, supervised the painting of the vessels themselves.

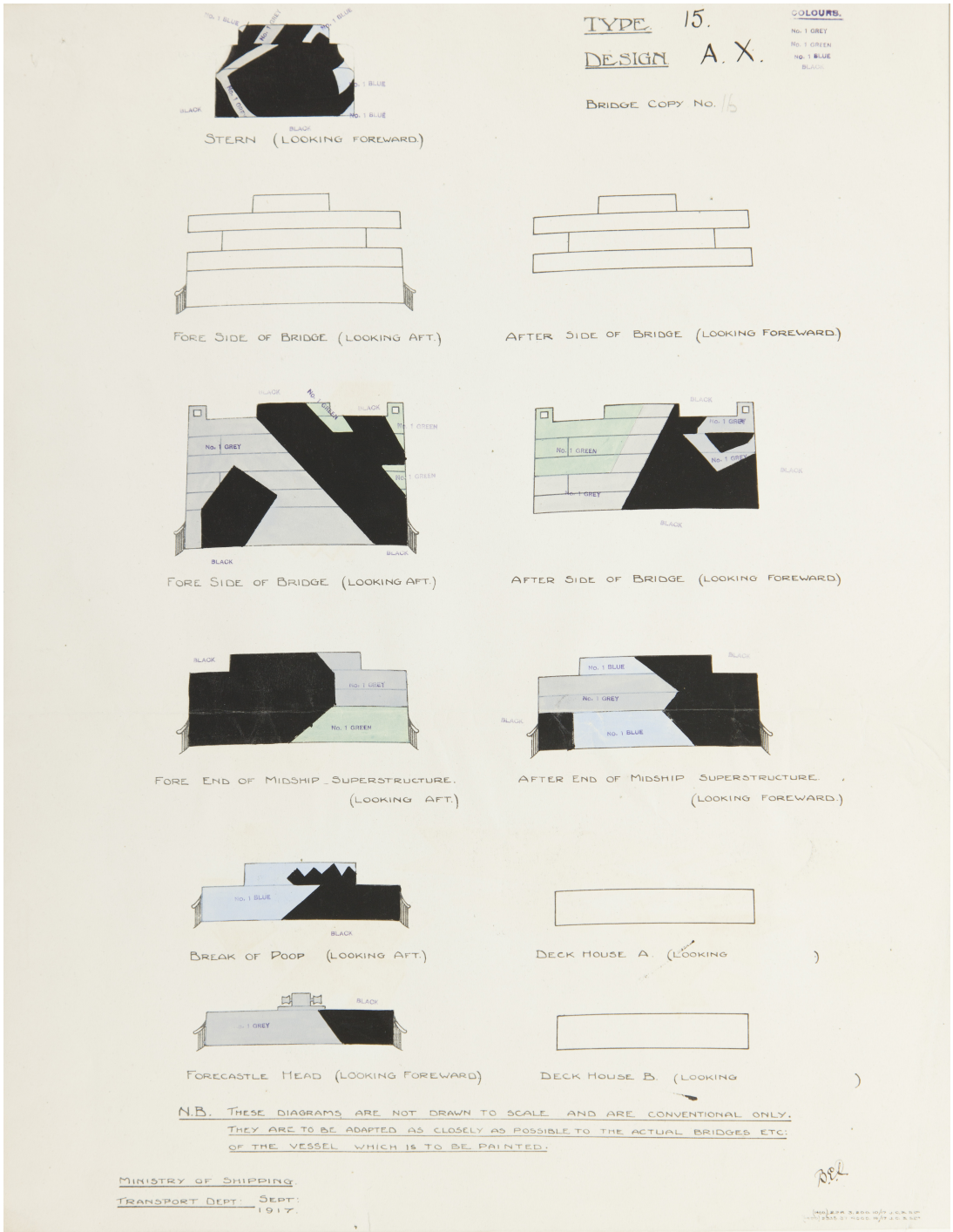

Figure 7: Dazzle design, Type 15 (bridge), lithograph hand-coloured with gouache on wove paper, c.1917, 425 x 330 mm, RA 09/1274 © Royal Academy of Arts, London.

Wilkinson estimated that around 4,000 British merchant ships and over 400 war ships were painted with dazzle during the First World War. He went on to help the USA and France set up similar camouflage programmes. The efficacy of his theories has never been fully tested, but Wilkinson amassed a dossier of reports from ships' captains attesting to the success of this new approach to camouflage at sea. [17] Furthermore, as works of art, the patterns he and his team produced are striking and appear powerfully modern. As the writer Peter Forbes has put it, 'there must have been something in the air in those days – not just of war but of modernist ferment. Because this most traditional of painters produced designs for ships which were a glorious success as avant-garde art.'[18] The dazzle 'look' certainly entered the public

consciousness. To celebrate the end of the war the Chelsea Arts Club held a 'dazzle ball' at the Albert Hall on 12 March 1919 featuring décor and costumes.[19]

[1] Poem by Gordon Frederic Norton, quoted in Norman Wilkinson, *A Brush with Life*, Seeley Service and Co., London, 1969, p.78.

[2] Letter of 16 June 1917, quoted in ibid., p.83.

[3] Ibid.,p.79.

[4] Peter Forbes, *Dazzled and Deceived: Mimicry and Camouflage*, Yale University Press, New Haven, 2009, Chapter 6, pp.85–101, https://books.google.co.uk/books?id=uX7305PGYMoC&p...

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[5] Ibid., Chapter 6 provides a full discussion of the differing theories of Kerr, Thayer and Wilkinson.

[6] Wilkinson, *A Brush with Life*, p.83.

[7] Royal Academy Annual Report 1914, p.14.

[8] Ibid, p.38.

[9] Royal Academy Annual Report 1916, p.29.

[10] Royal Academy Archive, RAA/KEE/2/5/13.

[11] See http://blogs.redcross.org.uk/world-war-one/2014/04/true-stories-from-wwi-the-crimson-field-and-our-pyjamas/

and https://www.royalacademy.org.uk/article/consequences-of-war.

[12] Wilkinson, *A Brush with Life,* p.89.

[13] Nicholas Rankin, *A Genius for Deception: How Cunning Helped the British Win Two World Wars*, Oxford University Press, Oxford, 2011, p. 131. With thanks to Camilla Wilkinson, the artist's granddaughter, for information on which college Eva Mackenzie attended.

[14] Royal Academy Annual Report 1917, London, pp.10, 32.

[15] *A Brush with Life*, p.89.

[16] Roy R. Behrens (ed.), *Ship shape, a dazzle camouflage sourcebook : an anthology of writings about ship camouflage*, Boblink Books, Iowa, 2012.

[17] *A Brush with Life*, pp.96–98.

[18] Forbes, *Dazzled and Deceived*,Chapter 6, p.100.

[19] Ibid., p.101.

Annette Wickham

Annette Wickham is Curator of Works on Paper at the Royal Academy of Arts where she has worked since 2002. During that time she has curated numerous displays and exhibitions of works from the Academy's collection including two recent shows marking the anniversaries of the First World War (*Dazzle!*, 2014) and the Battle of Waterloo (*Daniel Maclise: The Waterloo Cartoon*, 2015). Before joining the RA, Annette worked as an Assistant Curator at the Victoria and Albert Museum. She studied History of Art at Manchester University and the Courtauld Institute of Art.