



Stages #4

Zebras, Artists and Iron Fish

The Story of Dazzle

Liverpool
Biennial

Edward Wadsworth and the Art of Dazzle- Painting

Robert Hewison



Edward Wadsworth, *Dazzle-ships in Drydock at Liverpool* 1919. Oil on canvas, 304.8 x 243.8 mm. © Estate of Edward Wadsworth. All rights reserved, DACS 2015. Photo courtesy National Art Gallery of Canada.

The First World War was a tragedy for millions. It redrew maps, and provoked revolutions. It also drove social change, notably in [the role of women](#). It hastened technological innovation, with the development of flight and radio communications. It changed culture, as the optimism of early twentieth-century modernism gave way to a deeper pessimism.

It is one of the War's many ironies that a group of avant-garde artists and writers who wanted to celebrate what their leader called the 'vivid and violent ideas' of modernism should be destroyed by the

very forces that their work tried to express. When the Vorticists launched their manifesto *Blast* in July 1914, they did not know that an even bigger explosion would blow their movement away when war was declared only a month later.

Yet one of them, the painter Edward Wadsworth, managed to save something from the wreck, so that at least one great work of art came out of the cataclysm. Born in 1889, Wadsworth was the son of a wealthy Yorkshire textile manufacturer. In 1906, in order to prepare him to take over the business, his father sent him to Munich to study German and engineering draughtsmanship. Wadsworth also attended the Knirr Art School, where he studied drawing and painting, and also, importantly, woodcutting and printing. He decided to become an artist rather than an industrialist, and in 1909 he became a student at the Slade School of Art in London.

1909 was a key year in the development of modernism. While he was studying, Wadsworth was thrown into the whirlpool of new movements: British post-impressionism, French Cubism, Italian Futurism, German Expressionism, all of which challenged conventional ideas of art and representation. He also became a close friend of the man who was determined to create a distinctly British avant-garde, Wyndham Lewis.

Lewis was part Canadian, had studied in Paris, and was a novelist as well as a painter. He saw himself as a leader, and in 1914 he set out to create a movement that was not Cubism, that was not Futurism, and certainly wasn't Bloomsbury post-Impressionism. He set up what he called The Rebel Art Centre, the first floor of a house in Great Ormond Street, a place where the group he was forming could display their paintings and hold discussions. Out of the Rebel Art Centre came *Blast*.

This was the manifesto of what Lewis had decided to call Vorticism. The term 'vortex' had been used by the equally avant-garde poet Ezra Pound in 1913, and it sums up the rush of ideas, events and innovations – especially technological – associated with the start of the twentieth century. Pound wrote: 'The image is not an idea, it is a radiant node or cluster; it is what I can, and must perforce, call a VORTEX, from which and through which, and into which, ideas are constantly rushing.'

To express the energies of Vorticism, new visual forms had to be created, and Wadsworth, Lewis and the rest of the half dozen members of the group were reaching for a complete form of abstraction, as for instance in a piece by Wadsworth simply called *Abstract Composition*, from 1915.



Edward Wadsworth, *Abstract Composition* 1915. Gouache, ink and graphite on paper, 41.9 x 34.3 cm, Tate. © Estate of Edward Wadsworth. All rights reserved, DACS 2015. Photo © Tate Photography

In August 1914 the Vorticists and everybody else were swept away into the far greater vortex of the First World War. The Rebel Art Centre closed, the artists dispersed, most volunteered for the armed forces, and much of their work from this time has been lost. There was only one exhibition of Vorticist art ever held in London, in June 1915. The second, and last, edition of *Blast* appeared as a 'war number' in July 1915. By this time, one of the sculptors in the group, Henri Gaudier-Brzeska, had already been killed serving in the French army on the Western Front.

In 1915, Wadsworth joined the Royal Navy Volunteer Reserve, and after initial training on a gun battery in Paddington, in June 1916, now a Sub-lieutenant, he sailed for the Eastern Mediterranean. He served as an Intelligence Officer on Lemnos, an island forty miles from the Dardanelles, the scene of the disastrous Gallipoli campaign. Art was more or less out of the question on active service, but Wadsworth was able to prepare a number of woodcut designs that were cut and printed on his return to England. It seems entirely plausible that while on Lemnos Wadsworth met another artist turned naval officer: Norman Wilkinson.

Wilkinson was not a modernist. He had started life as a black and white draughtsman for the *Daily Graphic* and *The Illustrated London News*, specialising in nautical subjects, and he established a reputation as a marine painter. On his return from the Dardanelles he was given command of a motor launch patrolling the submarine-infested waters of the English Channel. At this time Germany was trying to starve Britain into submission, and Wilkinson realised that the naval transports – then painted black – made ideal targets against the skyline, as seen through the water-level periscope of a submarine.

A ship cannot hide, but it might be possible to confuse the hunter by painting the ship in such a way as to make it hard to tell what kind of ship it was, and difficult to calculate the speed and angle of its course. Because both ship and submarine were moving in relation to each other, the submarine commander had to calculate the angle of deflection so that torpedo and target would collide. Wilkinson realised that the answer was not to try to make the ship invisible, but to create an optical distortion of the shape of the vessel by breaking up its profile with stripes and curves painted in blues, greens, greys, pinks and purples.

And so the art of Dazzle painting was born.

This was not the first time that attempts had been made to camouflage ships, but thanks to Wilkinson's connections, the Admiralty took up the idea, and from 1917 onwards designs were prepared in London, and then sent to the ports, where naval officers supervised the actual painting. Among them was Wadsworth, who worked first in Bristol, and then Liverpool. He did not design Dazzle schemes himself, but the parallels between the enormous abstract shapes that he was responsible for creating and the mechanical forms that had contributed to Vorticism must have inspired him. He produced a series of nine woodcuts of Dazzle-painted ships, all of which matched the visual dynamic of Dazzle painting with the stimulating contrast of black and white, density and void, achieved by bold designs cut 'on the plank' of the wood, so as to be able to achieve a satisfying largeness of scale.

One of these designs, *Liverpool Shipping*, became the basis for a much larger work, *Dazzleships in Dry Dock at Liverpool*, which is Wadsworth's masterpiece, and his memorial to Vorticism. It was indeed created as a public war memorial. At the end of 1917, the Canadian War Memorials Fund commissioned a series of paintings to commemorate the Canadian contribution to the war effort. Some of these commissions went to former Vorticists – Wyndham Lewis, Frederick Etchells, William Roberts, David Bomberg – but there was a price to pay. The members of the Memorial Committee were not going to put up with anything too modernist. The official invitations to both Bomberg and Roberts specifically said: 'Cubist work is inadmissible.'

So these former rebel artists were forced to compromise their Vorticist vision through concessions to naturalism. Wadsworth, however, was able to continue to explore the language of Vorticism. Liverpool was one of the home ports for the Atlantic convoys, so he had a suitable subject, and the canvas would be on an impressive scale – the painting is nearly 3 metres high and over 2 metres wide. The four painters at the bottom of the canvas are indeed rendered more naturalistically than in the woodcut version, but at the same time he has added two pairs of much more stylised figures to the right and left in the middle distance. He has also suppressed puffs of smoke coming from the ship on the right, while adding smoke to two factory chimneys at the top.

But these changes are as nothing to the elaboration of the Dazzle design on the ship, whose bows thrust so impressively towards us. The pattern clearly differs from the stark simplicity of the woodcut, or

the actual designs on ships. Isolated from the rest of the composition, these bows, whose dynamic diagonals and inverted 'L' shapes recall Wadsworth's works from 1915 such as *Abstract Composition*, are a Vorticist invention. It was a final throw, before the post-war period forced Wadsworth and his fellow artists to reconsider their art and, as far as was possible, to reconstruct their lives.

Vorticism was killed by the violence unleashed by war, but it still represents an important moment in the history of modernism, and Wadsworth's transformation of Dazzle painting into art represents a rare synthesis between the destruction of war and the creativity of culture. He continued to paint ships and the sea, and the machine aesthetic of Vorticism continued to be a part of his maritime painting. Shipping, ports and ships' chandlery were to remain a constant source of visual interest to Wadsworth, through another World War, until his death in 1949.

The Dazzle Ships that Fooled the Iron Fish

Jeanne Robinson and Neil Johnson-Symington

In Conversation: Jeanne Robinson and Neil Johnson-Symington

Riverside Museum's multi-disciplinary display, *Nowhere to Hide: Camouflage at Sea*, combines traditional museum classifications of technology with art and natural history to tell the story of dazzle camouflage. The exhibition is the direct result of a collaboration between two curators from different disciplines: Jeanne Robinson, Curator of Entomology, and Neil Johnson-Symington, Curator of Transport and Technology.

Glasgow, 4 September 2015

Jeanne Robinson: Camouflage is a fascinating area, particularly for an entomologist, because there are so many strategies that insects employ to disguise themselves due to the fact that everything wants to eat them. When I started my research, the name John Graham Kerr of Glasgow University kept coming up. The other person I turned to for research was Graeme Ruxton, also from Glasgow University and following in Kerr's footsteps. He'd been interested in how animals avoid attack. I was looking for studies of how visual predators and their prey's camouflage really worked, instead of blindly adopting commonly held, human-biased assumptions.

Neil Johnson-Symington: It's good to reference Kerr here because, although we have no direct proof, I'd like to think that Glasgow did have some involvement with dazzle's development. We know that Kerr was a great exponent of what he called 'parti-colouring' and that during the First World War, he wrote to the Admiralty and Churchill to suggest that the same patterning you'd find on a ringed plover, skunk or zebra will also work with a ship. He was so tenacious and wouldn't stop writing. It took about a year of correspondence before he was advised that the Admiralty would not progress this. [\[Figure 1\]](#)

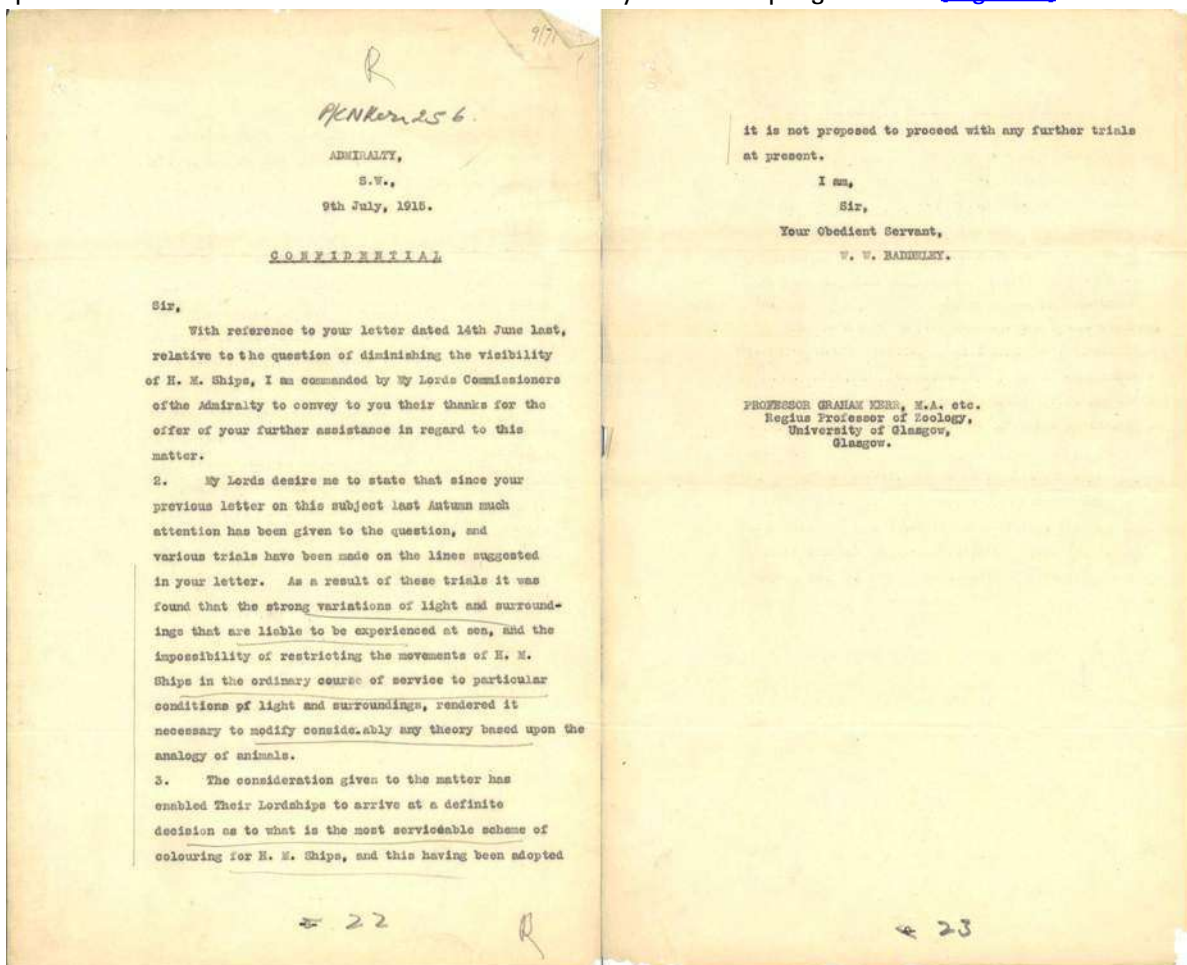


Figure 1: University of Glasgow Archive Services, John Graham Kerr collection, GB248 DC6/256/257

JR: The zebra and the plover [Figure 2] fit into the idea of disruptive colouration that's close to, and is

quite prolific in the natural world. It involves geometric lines and angular shapes that break up the outline so that the silhouette – the thing that helps its predator identify it – is disrupted. Dazzle was of course doing this on a grand scale compared to our tiny geometrid moths or even the ringed plover. We can also consider another form of camouflage, where the insect prey startle their predators with their colouration, or disguise themselves as something inedible.

NJS: Deceptive colouration.

JR: Yes, something like the flashing of eye spots, when a bird is in pursuit of a moth or butterfly, and these big eyes suddenly appear on the insect's wings. For a visual predator that's fairly intimidating.

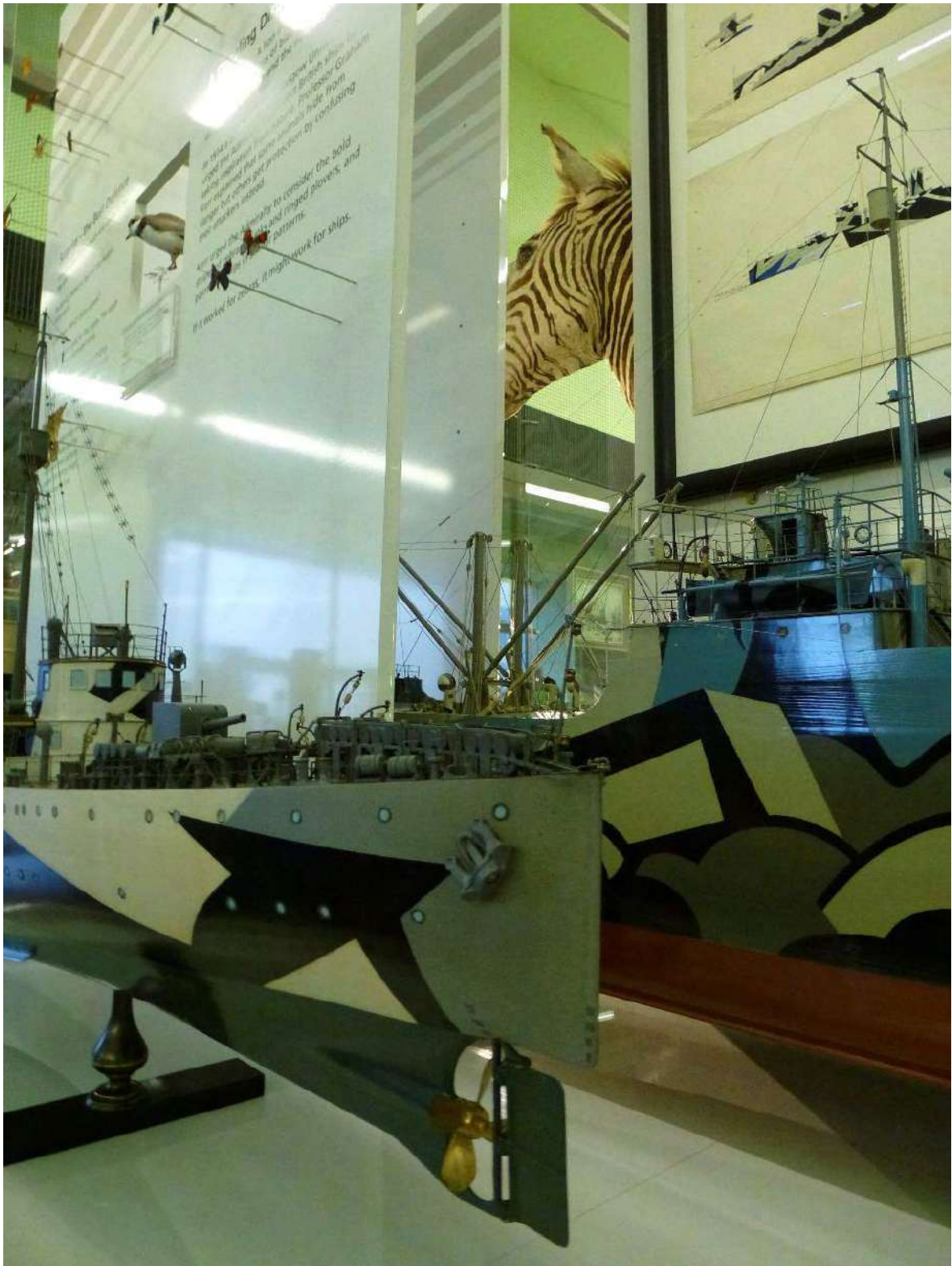


Figure 2: The Zebra and Ringed Plover on Display. © CSC CIC Glasgow Museums Collection.

NJS: That works so well with the dazzle ships, as some schemes appear to be designed so that the attention is drawn away from the most vulnerable parts.

JR: The idea with the eye spots, as well as to deflect attack, is to get the predator to focus on the parts that are less vulnerable, away from the body: most butterflies and moths can take a blow to the wings.

NJS: Similarly, there's a species that has sacrificial tails. [Figure 3]



Figure 3: Purple Spotted Swallowtail (*Graphium Weiskei*) from the Hunterian Museum's Collections, University of Glasgow. © University of Glasgow (Hunterian Museum).

JR: Yes, the Swallowtail and Hairstreak butterflies. Quite often when you're capturing these you find their tail tips missing as a result of attacks by birds.

The zebra is one of the most interesting stories, because there's a common misconception that its stripes help it hide in the long grass. This is simply not the case. It's been shown that zebra stripes help avoid parasite attack, as parasitic tsetse flies are attracted to solid black or solid white targets much more than stripy targets. Considering the fact that avoidance of parasites is crucial to animals' survival, this is a far better explanation for the zebra's dazzling stripes.

NJS: The grouping of the zebra and these tiny tsetse flies in the exhibition is one of my favourite parts of the display. Visitors are quite confounded to see this sort of thing in a transport museum, but together the zebra and tsetse flies demonstrate the same relationship as that of the Dazzle ship and the U-Boat.

JR: A lot of my insects have quite complicated patterns in all kinds of earthy tones, and their backgrounds are also complex, so they have a lot more to disguise them, whereas something the size of a ship that just has predominantly the sea and sky, that's a much broader challenge.

NJS: Absolutely. That's the whole idea of dazzle – that they can't possibly mirror their surroundings or blend in. These ships were sitting ducks, totally vulnerable. That's what I really liked about some of the insects that you chose. The jewel beetles are quite extraordinary – they're so bright and shiny they literally have a dazzle effect.

JR: They look stunning and they illustrate the principles with the banding, spotting and dazzling. But there are actually lots of other potential reasons for their iridescent colours: advertising to mates that you're in fabulous condition; the light reflection may help you blend into a dappled woodland environment, or simply be a side-effect of some other trait like having a strong casing.



Figure 4: Detail of port side of SS War Drake, 1918. © CSC CIC Glasgow Museums Collection.

NJS: I think it's intriguing to relate them to the dazzle scheme drawings because the earlier ones were very brightly coloured, as *SS War Drake* [Figure 4] shows with its bright blues and so on. They couldn't keep that up though, not least because of the wear and tear caused by the ocean. But as they went on they started to focus on just a few colours, usually subdued but with as strong a contrast as they could achieve. There's a terrific cartoon by Tommy Livingstone of a dazzle ship at Govan in Glasgow from January 1918 that's full of incredible colours – violet, emerald, blue, orange. [figure 5]

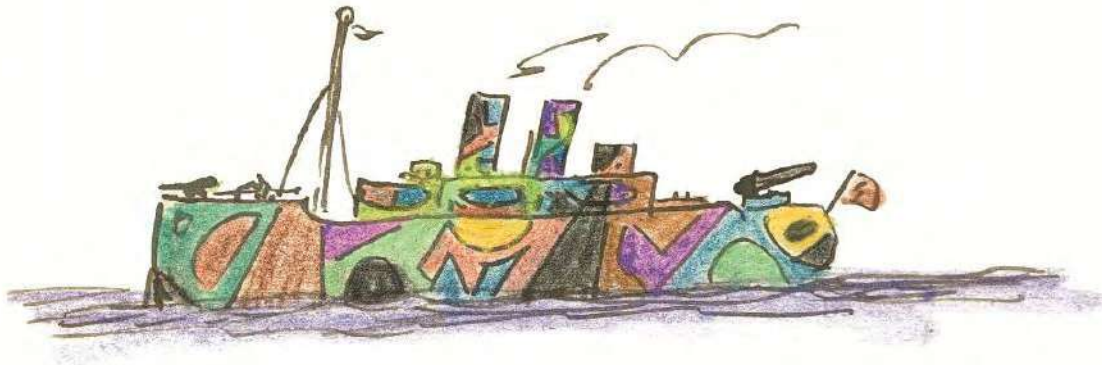


Figure 5: © Estate of Thomas Cairns Livingstone under licence to Shaun Sewell

JR: Colours that any jewel beetle would be proud to sport. Nature's colours are considerably more durable though!

NJS: We don't know if it was artistic license or if it was actually an early dazzle scheme. It would tie in with some tests that the Admiralty commissioned with dazzle-painted ships. One of these was done on the Firth of Clyde and not one of the crew could agree on the course of the painted ship – it would be amazing if this was the ship that Livingstone drew.

JR: The way that the dazzle ships evolved in relation to their hunters, and the way animal camouflage evolves in response to predation, is quite interesting – it's a similar relationship. That is, once you know

what you're looking out for it becomes easier to spot – once you know the camouflage strategy that's being employed and you recognise that pattern, you become better at picking it out against the backdrop. When the dazzle ships first came out, they must have sent alarm bells ringing.

NJS: That's perhaps why a captain within the Admiralty suggested to Wilkinson that you should have each side of the ship dazzled in a different way, just to further add to the unpredictability.

NJS: When we talk about dazzle, we instinctively think of Norman Wilkinson, as he's credited as the mastermind of dazzle who led the whole team. But I still find myself thinking of Kerr and wondering what happened to him. He wrote to the Admiralty again to express his dismay at not having his idea taken forward and I think he does see similarities between his ideas and those of Wilkinson. Y. YY You can tell he's frustrated. He could be argued to have planted the seed, but there's no acknowledgement of this.

JR: What's interesting is when you walk around the insect collections of Glasgow University today, you still get a feel for what a key area it was for Kerr – a lot of the teaching drawers are still laid out displaying different types of crypsis, warning, mimicry and all these other things that we explored. Kerr was instrumental in setting up the zoology museum and sourcing the best possible specimens to illustrate the principles of zoology that he taught. [Figure 6]



Figure 6: Teaching drawer from Hunterian Museum Collections Illustrating Animal Camouflage. © University of Glasgow (Hunterian Museum) tbc

NJS: So he certainly devoted his life's work to this school of thought.

JR: It was definitely a major theme that he was exploring.

NJS: Even though we mention him fairly briefly in the display we've curated, I'm so glad to have conveyed his perspective, since it's quite often overlooked in the dazzle story. Looking back on the project, what surprised you the most about the journey to the display? Did it inspire a new way of working?

JR: No, I've always enjoyed the crossover. I think it just reinforced what I've always thought, which is that usually nature has done it first. We always like to pat ourselves on the back and feel very clever and ingenious, but we're so linked with our environment even though it's not always totally apparent in our initial observation. Nature is such a powerful driving force and an inspiration for so much of what we do.

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Riverside Museum, Scotland's Museum of Transport & Travel:

<http://www.glasgowlife.org.uk/museums/riverside/Pages/default.aspx>

Designed to Dazzle

*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]*

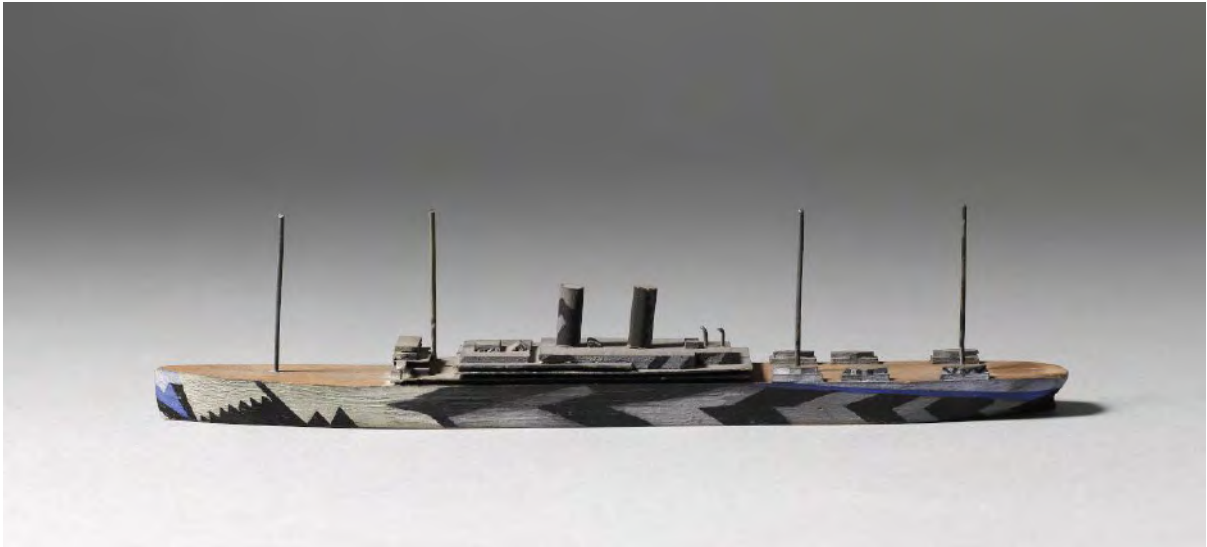


Figure 1: Model ship painted with First World War Dazzle camouflage, wood and metal, c. 1917, 57 x 32 x 245 mm RA 04/1455. © Royal Academy of Arts, London; Photographer: Prudence Cuming Associates Limited.

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.

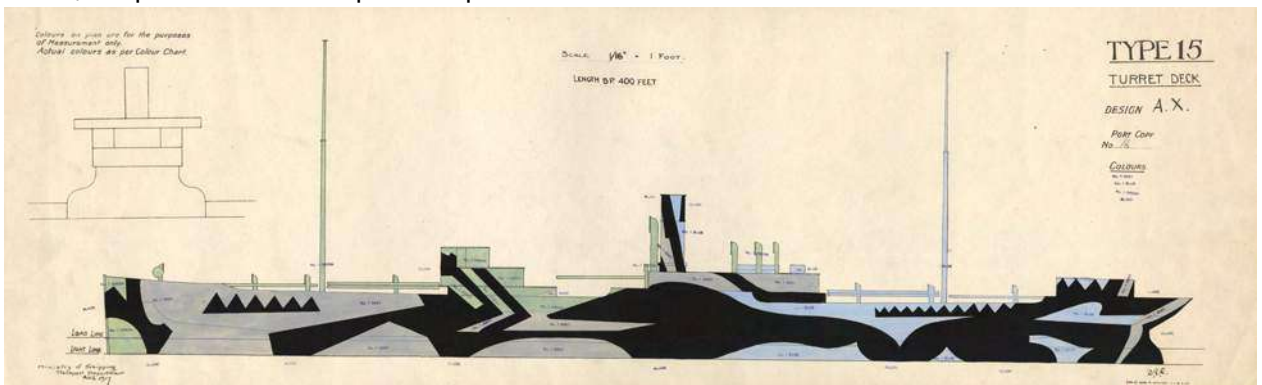


Figure 2: Dazzle design, Type 15 (port side), lithograph hand-coloured with gouache on wove paper, c.1917, 242 x 765 mm, RA 09/1269 © Royal Academy of Arts, London.

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 included spinning 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]

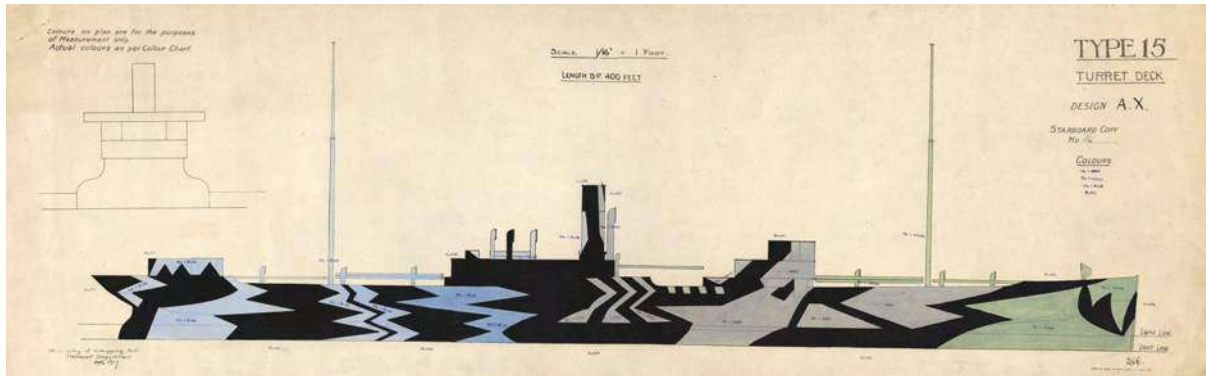


Figure 6: Dazzle design, Type 15 (starboard side), lithograph hand-coloured with gouache on wove paper, c.1917, 240 x 761 mm, RA 09/1264 © Royal Academy of Arts, London.

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.

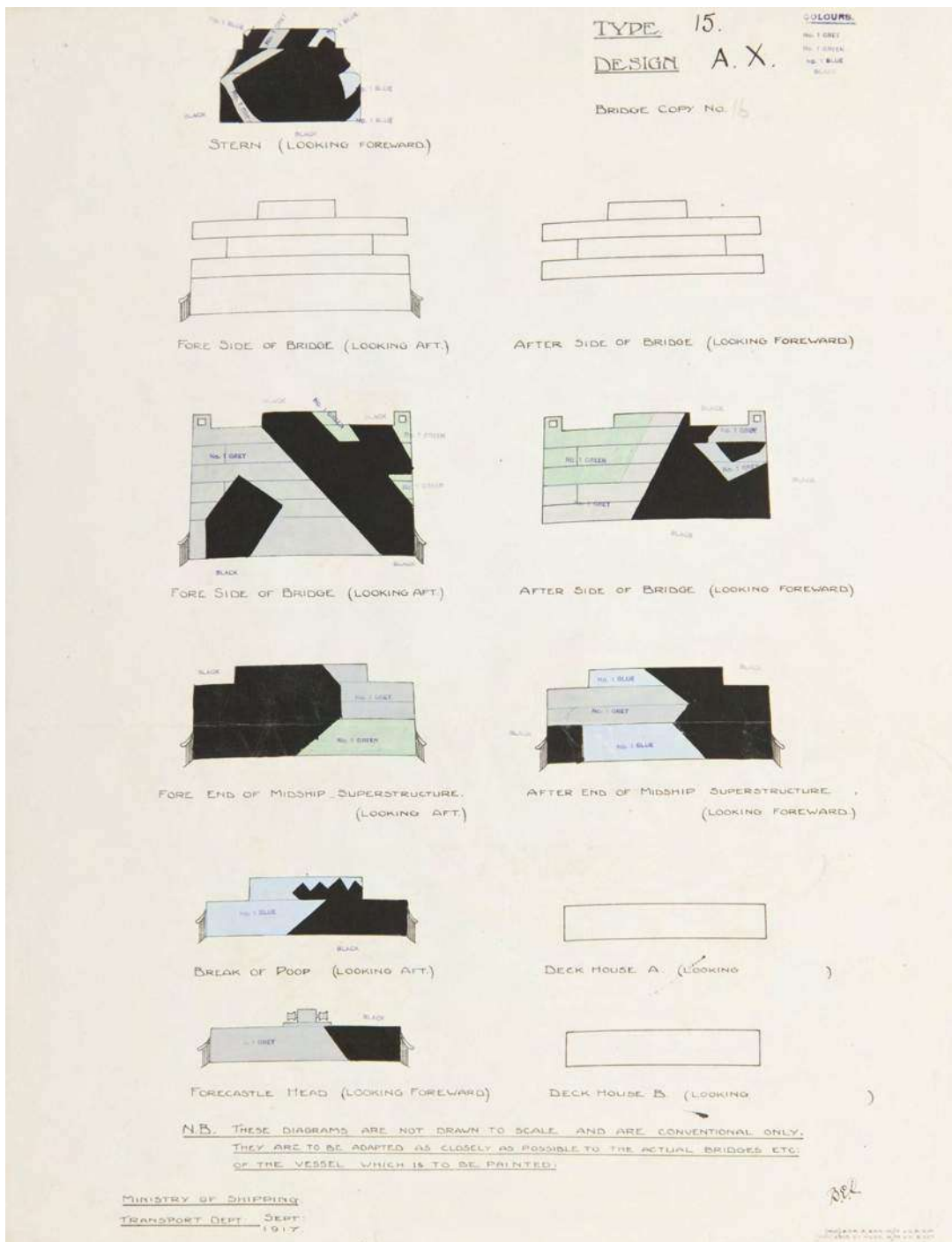


Figure 7: Dazzle design, Type 15 (bridge), lithograph hand-coloured with gouache on wove paper, c.1917, 425 x 330 mm, RA 09/1274 © Royal Academy of Arts, London.

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...> as well as 'TITLE INSERT' in this journal WEB LINK.

[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.

Interview with Sir Peter Blake



Sir Peter Blake, *Everybody Razzle Dazzle*, 2015. Photo: Mark McNulty

Sir Peter Blake is the third contemporary artist to be invited to 'Dazzle' a ship in a co-commission by Liverpool Biennial, 14-18 NOW: WW1 Centenary Art Commissions and Tate Liverpool, in partnership with Merseytravel and National Museums Liverpool. 'Everybody Razzle Dazzle' is his design for the Mersey Ferry 'Snowdrop', which will remain in active service until December 2016. Blake is a seminal Pop artist, whose early ambition was to make works of art with which people could engage on the level of pop music. He initially trained as a designer, and is also an inveterate collector, who has amassed folk art, celebrity memorabilia, toys, circus paraphernalia and many other types of objects over decades. His fascination with amateur crafts and untrained making govern many aspects of his artistic practice and his collecting. Here he talks about 'Everybody Razzle Dazzle' and his own collection of maritime objects.

The thing was to do a dazzle ship and also for it to be a memorial to the First World War – the two things tied in. So it started off being quite grey, dour and serious, much more of a memorial. The initial design had a big stencil of 1914–18 to commemorate the war. As we went on that slipped away a bit – we'd moved into 2015, so we were a year away from the centenary of the beginning of the First World War. I researched the historic dazzle ships that were done, and made a version of that using very bright colours, and introducing a Pop art element as well.



Sir Peter Blake, *Love Wall* 1961. Collage construction, 125.7 x 205.7 cm, Calouste Gulbenkian Foundation. © Peter Blake. All rights reserved, DACS 2015.

There's a range of symbols I use again and again: a star, a heart, a target and a rainbow. Somehow the heart didn't seem appropriate, but the star, the target and the rainbow had a kind of link. There isn't a rainbow in rainbow colours, but there's a black and white rainbow. The symbols were in some of my very early pictures, for example a picture called *Love Wall* from 1961. Later on, about ten years ago, I reclaimed them as 'Peter Blake Pop Art Incorporated', and started using them almost in a corporate way. I did a logo containing the four elements. I've done variations of that in different works. *Love Wall* was all about love: the work incorporated a door and a window, and it was full of references to love, so the heart was appropriate.

I was using fairground imagery at that time as well, so stars come up again and again. The red and yellow diagonal comes from the warning sign that you get on the back of lorries telling you not to come too close. If you're driving behind a lorry, you're driving behind a piece of Pop art. When I saw it first, it just seemed a very beautiful image. The elements of the design came from sources like that. It connects to sign writing, and the fact that I was partly trained as a graphic designer. I've always been interested in sign writing, fun-fair lettering and things like that, and that came into the design.

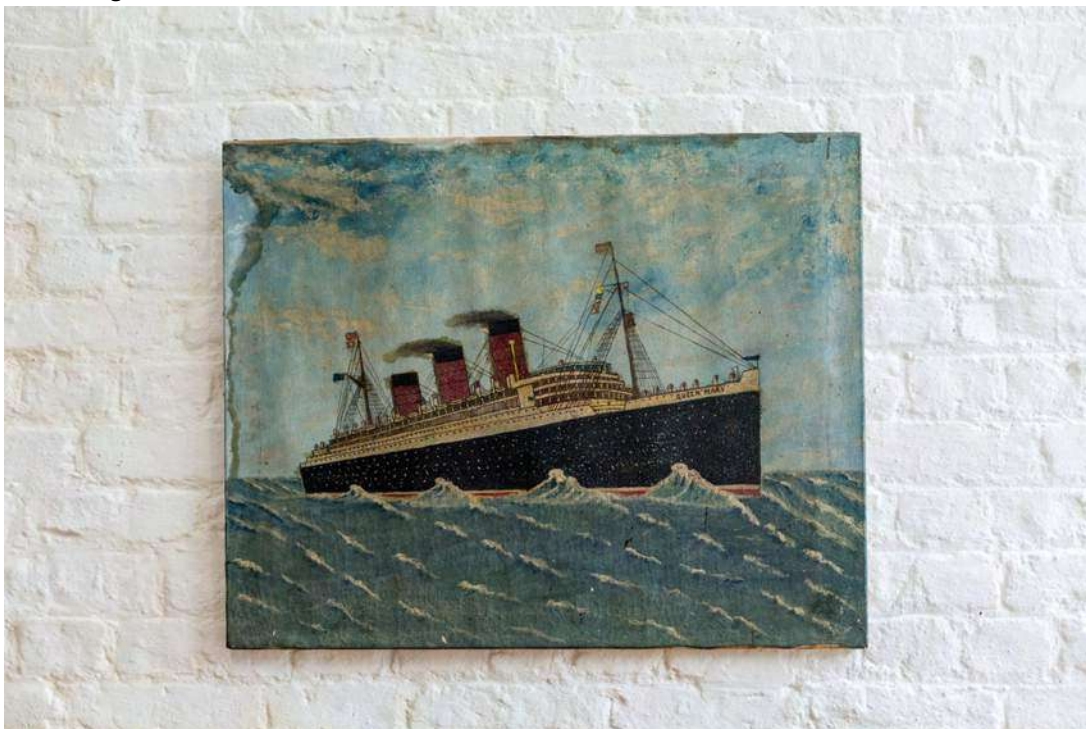
There's also an element of Op art in there too – it's almost like a Bridget Riley painting. She'd be a great one to commission to dazzle a ship – except it would drive everyone mad, because you'd start falling over. It would probably be very successful as dazzle. Some of those early black and white paintings you can hardly look at, because of the optical tricks they perform; that was the point.

I certainly took the original dazzle designs as an influence. The black and white diagonal picks up on the diagonals I did before, and the way the dazzle ships were done. With the harlequin patterns, perhaps the original dazzle painters were trying to bring a light element to the designs. And the harlequin image comes up again and again. It goes back to Picasso. The dazzle painters probably had fun. The camouflage squad in the Second World War were all commissioned by Sir Robin Darwin, who was head of camouflage, and they were his mates. It was people like Ken Rowntree, Ruskin Spear – they all moved on to the RCA with him when he took over there.

Dan Faine and I worked on the design on the computer. We were working from side elevations, which of course were flat. When we came to Liverpool to look at the ferry, I was quite shocked by how wide it is, compared to its length. When you're looking at its back, it's very wide. So anything on its back actually goes round a long distance. From the bumper rail that goes round it, the side of the boat tucks away at a

very deep angle into the water. So something like checkerboard becomes quite different when it's going at an angle. When we'd actually seen the ship, the checkerboard was something that changed the design quite a bit. I designated that to the painters, and trusted them as professional boat painters to figure it out. I think they had fun doing it. Then there was the second stage, when we looked at the interior colours. We made a change on the funnel, because it looked like a German flag: the wrong colour was next to the black.

I never thought I had a maritime collection, but it's interesting that of the first three objects I collected, one was maritime. The very first piece I bought was a painting of the *Queen Mary*, so that is important and really started the whole thing. At one point, I thought we might buy a house by the sea, and I put together a vague collection – if I saw anything maritime, I tended to buy it. So there is quite a nice collection of model boats and things.



Anonymous painting of the Queen Mary in the collection of Sir Peter Blake, oil on board, 460 x 590 mm. Photo © Hydar Dewachi 2015.

I found the painting of the *Queen Mary* in a junkshop when I was at Gravesend School of Art. By then, I'd been taught by Enid Marx, who had a folk-art collection, which is now at Compton Verney, and she instilled a love of folk art into me then. She would have been teaching lettering, or something like that. She took over teaching from someone for a year, and she knew that in Gravesend an old sea captain had a collection of figureheads, and she arranged a private visit. It wasn't a museum, as such. He had this collection of about thirty figureheads. Gravesend is opposite Tilbury, so the Orient Line left from Tilbury to go to Australia and China, and all these long journeys. So any time an Orient Line ship sailed, he let off a hooter to wish it *bon voyage*. After we visited the sea captain, Enid Marx asked me to design a letter that we would send from the class to thank him. This would have been the late 1940s. I was still a designer at that point, before I went to the Royal College of Art.



Anonymous ship model in the collection of Sir Peter Blake, c.1950. Wood, paint and wire, 42.5 x 92 x 19 mm. Photo © Hydar Dewachi 2015.

The shell collection came about when I was asked to do a residency at the National Gallery in 1994. Walking to the station, I would pass two or three charity shops, and they always had a shell item, such as a box covered in shells. So I bought the first one, and I bought the next one, and then of course that's a collection, and from then on, anything with a shell I bought. I have these little model boats where the sails are made of shells, and seaside souvenirs. You can still get these. Some of the modern seaside ones are awful. Dogs covered in shells are pushing it a bit. These are pretty awful, the crinoline ladies. The first person who made one must have just thought 'That would be a good idea.' Someone must have thought, 'That would be nice, lots of little shells on a box.'



Maritime objects from the collection of Sir Peter Blake. Photo © Hydar Dewachi 2015.

I've got scrimshaw, quilted cushions made by sailors to send home to their wives, and model ships made to various degrees of amateurism, through to very professional ones made by shipping lines. I tend to collect the amateur ones, but I've got some nice models, and tin toys. The model of the *Bournemouth* came from a junkshop. These models are usually quite naïve in their style, the sort usually made by old blokes to take to sail on ponds, like [the nice man who made a model of Snowdrop](#). The Dreadnought is a German tin toy that would have been to push around. The *Rose Belt* is African. The person who made it would only have seen these big boats going past on the very horizon, so their information about what they were like wasn't very clear. It has these odd differences in scale, like this huge ladder that runs down the side of the ship, where one link of the ladder would be the size of a man.

The quilted cushions tell you so much about the lives of sailors, what they made in their time off. I suppose all those old blokes are watching television now; they're not making cathedrals out of matchsticks.

Sir Peter Blake in conversation with Lauren Barnes, 25 September 2015

Chromatic Discourse

Stephanie Straine



Figure 1: Carlos Cruz-Diez, *Induction Chromatique à Double Fréquence pour l'Edmund Gardner Ship / Liverpool*. Paris, 2014. Photograph: Roger Sinek.

Almost eighteen months after Franco-Venezuelan artist Carlos Cruz-Diez (born 1923, Caracas) unveiled his new monument for Liverpool's historic waterfront, we take the opportunity of this special thematic dazzle issue of *Stages* to return to the pilot ship *Edmund Gardner*, and invite Cruz-Diez to reflect on this work, [*Induction Chromatique à Double Fréquence pour l'Edmund Gardner Ship / Liverpool. Paris, 2014*](#) – a joint commission by 14-18 NOW: WW1 Centenary Art Commissions, Liverpool Biennial and Tate Liverpool, in partnership with Merseyside Maritime Museum – and its relationship to both its immediate environment and his wider artistic practice.

In a defining statement on his practice, the artist emphasised its perceptual and experiential nature as an encounter to take place in space and time, declaring: 'I wanted my work to be a phenomenological situation where true colour would be liberated from all aesthetic and symbolic meaning, and would therefore reach its maximum potential.'^[1] The location of *Induction Chromatique à Double Fréquence pour l'Edmund Gardner Ship / Liverpool. Paris, 2014* within the Canning Graving dry dock enables viewers to encounter Cruz-Diez's work from multiple viewpoints and perspectives: approaching it from afar as a rupture in the visual field, or experiencing its dramatically hued paint surface up close, as part of a Merseyside Maritime Museum tour of the pilot ship. In both scenarios, the innate physicality of the work's chromatic field has a suggestive power, destabilising our reading of the surrounding environment.

Stephanie Straine: Your commission for Liverpool, which premiered last summer, *Induction Chromatique à Double Fréquence pour l'Edmund Gardner Ship / Liverpool. Paris, 2014* (figures 1 and 2), took its inspiration partly from the practice of 'Dazzle' painting navy ships during the First World War, and combined this reference point with your own substantial research into what you have called 'the ephemeral and unstable character of chromatic perception.'^[2] The aim of Dazzle painting was optical distortion. Can you explain how you brought these two notions of distortion and perceptual instability together through the use of colour?



Figure 2: Carlos Cruz-Diez with Painters, Liverpool 2014. Photo: Mark McNulty.

Carlos Cruz-Diez: I had a wonderful time working on the *Edmund Gardner* because it gave me a chance to create a chromatic spectacle across a support I had never worked with before.^[3] Back in 1987, I

had a project to transform a cargo ship into a convention centre, but it never got past the maquette phase. Bearing in mind the extraordinary interventions by artists that took place during the war, my intention was never to replicate any sort of camouflage, but to deploy my own plastic vocabulary and to obtain another kind of visual result coherent with the support of the boat.

SS: In this work, part of your ongoing *Induction Chromatique / Chromatic Induction* series (which has previously featured other interventions in the urban environment, such as the temporary alteration of a Marseille city bus in 1989, figure 3), the investigation into our perception of colour hinges upon the 'afterimage', an optical illusion that occurs – often in the form of a residual glow – when an image continues to appear on the retina even once the viewer has looked away. How does the work's alternating bands of colour produce such an effect, and how do you intend the viewer to experience it, ideally?



Figure 3: *Induction Chromatique à double fréquence, ephemeral intervention on bus, on the occasion of the event "L'art dans la rue".* Marseille, France, 1989 Copyright: © Adagp, Paris 2015

CCD: The ideal thing would be for the *Edmund Gardner* to actually set sail. That would fulfil my goal to create a spectacle in continuous transformation. That being said, I am more than satisfied with its current location in dry dock, because it acts as a visual reference point and, as it were, furnishes the urban space chromatically.

SS: The exterior of *Edmund Gardner* became the support for your chromatic work. The painting is on the surface of the vessel, coating it like a new skin, but underneath, the boat and its contents remain in the same state of preservation as before, its function unchanged, its original livery beneath the new paint. Do you consider this work for Liverpool to be a sculpture or a painting *on* an object (in this case a boat)? Does your work stop at the paint surface, or does it extend beyond it?

CCD: When you intervene on a support within an artistic discourse, you transcend the support and engender manifold readings. This specific object can not help but remind us of what it used to be, yet at the same time it causes a sense of amazement because it's not what you expect from a ship. In the event that *Induction Chromatique à Double Fréquence* were to last over time, the *Edmund Gardner* could become an urban landmark for the local community.

SS: Following on from my previous question, how do you conceptualise the relationship between

surface and support (or supporting *structure*) more widely in your work, and how does this translate when the support is an independent object with another, totally separate function?

CCD: If a discourse is written, then it needs a paper support and, likewise, if it is visual, it requires space or matter where it can be applied. In the case of the *Edmund Gardner* there was the possibility of creating a frontal view that sets off ranges of colours throughout the ship, evolving as we move. The chromatic discourse is disclosed through the spectator's distance, displacement and angle of vision.

SS: What do you hope that a wider understanding of our experiential and perceptual relationship with colour can contribute to the social and public realm?

CCD: I have always believed that art is communication and that it also has an educational side to it. This work with the *Edmund Gardner* affords another type of information on the nature of colour. It forces us to shift from passive to active contemplation and it shows us colour evolving in time and in space.



Figure 4: *Color Aditivo*, intervention on four crosswalks on the occasion of the event "El artista y la ciudad". Caracas, Venezuela, 1975 Copyright: © Adagp, Paris 2015

SS: Many of your projects take place in the public realm, such as your *Color Aditivo / Additive Colour*

projects that enact another form of chromatic intervention: transformative pedestrian crosswalks stretching from Caracas in 1975 to Liverpool in 2014 (figures 4 and 5). What do you believe to be the artist's role in society?



Figure 5: *Couleur Additive Liverpool ONE*, Liverpool. Photo: Mark McNulty

CCD: I believe that the public space is the ideal support for an artist to express himself and also to provide information and spiritual pleasure for the human mass that, day after day, passes robotically through aggressive surrounding environs underwritten by behavioural codes.

SS: Can you talk about your relationship to Cubism, and what you took personally from a study of Cubism, given that the movement was one of the key inspirations for dazzle camouflage? Do you consider your practice to have any links with those radical departures in form, colour, perspective and composition first advanced by the Cubists over a century ago?

CCD: My practice is a historical reflection on colour in art. My grounding is in Impressionism, Cubism, Constructivism, scientific theories and industrial processes for the multiplication of the coloured image. The behaviour of painted colour on the static plane in Josef Albers's work was one of the influences that encouraged me to remove colour from the flat plane and take it into space, evolving and in continuous mutation, just like reality itself.

SS: Looking back on your arrival in Paris in the late 1950s, you wrote of the artistic community there that: 'We were all for the destruction of the sacred aura surrounding the romantic artist, for we considered our research of the same nature as that of a scientist. Art had to be in the streets, not only in museums.'^[4] This standpoint seems to echo the position of those artists who were involved in dazzle painting and the war effort. What's your opinion of the relationship between art and science today, and do you feel that deeper collaboration is necessary?

CCD: The relationship between science and art is to call truth into question and to take a leap into the unknown in search of other truths. Either one can reach its goal or wind up in a dead end, but the important thing along this path is to discover, to invent and to communicate our astonishment.

The Franco-Venezuelan artist Carlos Cruz-Diez (Caracas, 1923) has lived and worked in Paris since 1960. He is a major protagonist in the field of Kinetic and Optical art, a movement that encourages 'an awareness of the instability of reality'. (Jean Clay, 'La peinture est finie' [Painting is Finished], Robho, no. 1, 1967, n.p.) Carlos Cruz-Diez graduated from the School of Visual Arts and Applied Arts, Caracas, in 1945. While still at art school, he worked as an illustrator for popular Venezuelan newspapers and magazines, and from 1946 to 1955, he was the creative director at the Caracas branch of McCann-Erickson, the international advertising agency, and contributed illustrations to the Venezuelan newspaper El Nacional.

In 1956, after a year in Europe making his earliest abstract compositions, he opened the Estudio de Artes Visuales in Venezuela, a visual arts studio for graphic and industrial design. It was during that period that Cruz-Diez started developing the conceptual platform for his work based on optical and chromatic phenomena, a process that led to the creation of his first Color Aditivo (Additive Colour) and Fisicromía 1 (Physiechromie), in 1959. He and his family settled in Paris in 1960, where he met and discussed his ideas with international artists such as Agam, Tinguely, Soto, Buri, Picelj, Morellet, Camargo, Lygia Clark, Le Parc, Calder and Vasarely.

In 2005, his family created the Cruz-Diez Foundation, whose mission is to protect, preserve, promote and research his artistic and conceptual legacy. In 2014, the Foundation published his memoirs, Vivir en Arte, recuerdos de lo que me acuerdo (Living in Art: Memories of What I Remember), and in 2015 Cruz-Diez was awarded the Turner Medal in London.

Translators: Ana Botella (English to Spanish) and Lambe & Nieto (Spanish to English)

[1] Carlos Cruz-Diez, 'Structure and Effectiveness of a Plastic Discourse' (1989), in *Reflection on Color*, Fundación Juan March, Madrid, and Cruz-Diez Foundation, Houston, Texas, 2009, p.146.

[2] Carlos Cruz-Diez, 'History of Structuring a Discourse on Color: Prologue to the Second Edition (2009)', in *Reflection on Color*, Fundación Juan March, Madrid, and Cruz-Diez Foundation, Houston, Texas, 2009, p.12.

[3] The term 'support' as Cruz-Diez uses it in this context refers to *any* material onto which his chromatic works are incorporated, applied or painted (in this case a pilot ship). As he has written of his early career developments, 'I intended to find a "support" through which I could reveal "colour in the process of becoming", continually appearing and disappearing before our eyes.' Ibid., p.15.

[4] Carlos Cruz-Diez, *ibid.*, p.21.

Dazzle Ship London

Dazzle Ship London on *HMS President 1918* is the result of a number of converging factors and opportunities that came about in an innovative cultural alliance that resulted in the commissioning of the Frankfurt based artist Tobias Rehberger.



Tobias Rehberger 2014. Photo: David Kew

HMS President 1918 is moored permanently on the north shore of the River Thames in central London on the Victoria Embankment where it now operates as a multi purpose venue and is the home to a number of small specialist businesses. It is one of only three remaining World War One ships in the UK. It served as a Q Ship in the war under its original name of *HMS Saxifrage*. During its wartime activity it was, like so many vessels, 'dazzled' as a means of confusing U-boats. One of its distinctive features is its reinforced bow which was intended to be used to ram surfacing U-boats after they had presumed that the ship was not in fact a warship but unarmed. Another feature of the ship was its hidden guns, which would fire at the U-boat once it had surfaced. It was also equipped with additional powerful propulsion that meant it could turn quickly, and travel at great speed to ram the unsuspecting U-boat before it had time to dive back underwater.

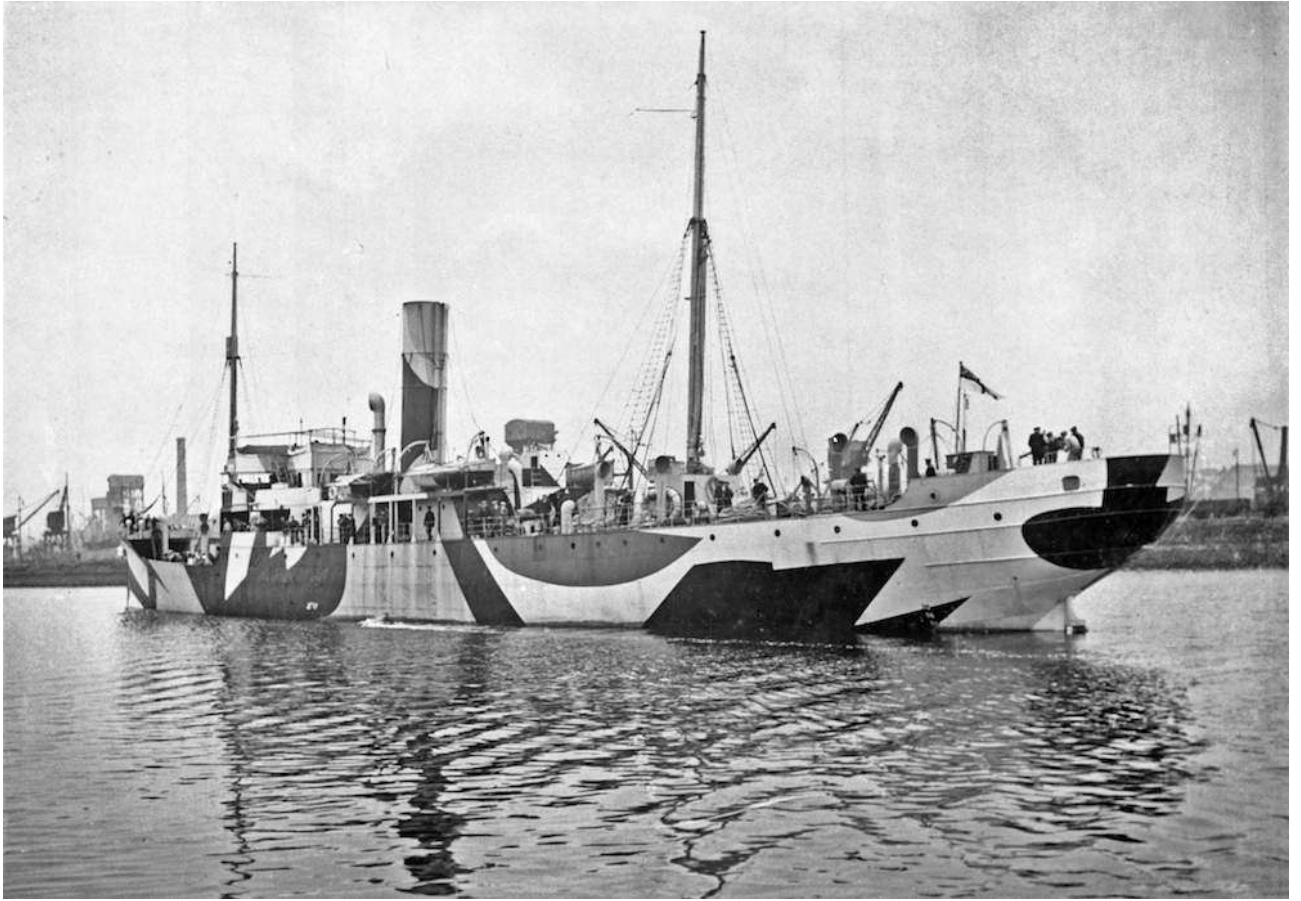


Photo credit: Imperial War Museum

Around the time of the planning for the World War One commemorations I was approached by the management of *HMS President 1918* to explore the possibility of embarking on a series of dazzle events that would culminate in the original dazzle pattern being reinstated for the ship's one hundredth anniversary in 2018. As a long term river resident (I live on a converted Medway Coaster on the Thames close to *HMS President 1918*), and work at Chelsea College of Arts on the riverside at Millbank, next to Tate Britain. The prospect of being able to bring together a number of resources, varied knowledge and specialist expertise seemed the perfect starting point for a high profile art commission. The subsequent interest and support from 14-18 NOW and Liverpool Biennial resulted in the commissioning of Tobias Rehberger – a process that unfolded fairly rapidly in 2014.

Tobias Rehberger has a long-standing interest in dazzle camouflage. He also has the capacity to undertake large scale public works, in fairly challenging environments where the work often competes for attention with the site itself. He works across a variety of media, and often in collaboration with other people: this was essential given the challenging nature of the site and the necessity to involve a wide range of specialists. The decision to commission Tobias was underlined by some of his more recent works in the public domain such as the cafeteria at the 53rd Venice Biennale for which he was awarded the Golden Lion. In this commission, he collaborated closely with the furniture designers Artek, using customised furniture in an ingenious way: creating a complex scheme of geometric forms with contrasting colors, a visually disorienting environment that drew from a specific example of razzle dazzle or dazzle painting used on ships during the First World War.

His continued interest in creating spaces that can be occupied and directly engaged with was also a key feature of his proposal for *HMS President 1918*. The ship is active, hosting many visitors and events, and it is seen by thousands of people every day.

Rehberger's proposal, titled *Dazzle Ship London*, brought together references from art history such as Claes Oldenberg and Coosje Van Bruggens 'Knot' sculptures, with traditional dazzle camouflage. Rehberger responded to the shape and scale of the ship, playing with ideas of visibility and invisibility. Aspects of the dazzle design give the impression that the 'skin' of the ship has been removed to reveal an amplified series of pipes, wires, ducting, voids and passageways that lie below the surface. It reveals the ship's complex structure and history: relating to the way in which, during its wartime role, it kept its real purpose camouflaged.



Tobias Rehberger, *Dazzle Ship London*, 2014. Photo: Chris Wainwright

Unlike the original dazzle designs which were painted directly onto the ship's steel, Tobias created his design from computer based drawings and complex 3D modelling. These were then translated into large vinyl panels moulded and adhered to the surface of the ship in over 90 unique sections. The installation of the artwork was extremely challenging and required a large specialist team of marine project managers, workboats, safety craft, artists, printers and large scale environmental installers. The surface of the ship was very complex, with curves, overhangs, windows and portholes, and a myriad of surface-mounted parts - all of which had to be covered as part of the overall design. Teams had to work at great heights, often suspended on safety lines over a fast flowing tidal river with all of its traffic. One of the contractors told me that it was a bit like trying to erect something on the hard shoulder of the M6.



Tobias Rehberger, *Dazzle Ship London*, 2014. Photo: Chris Wainwright

As commissioners, we wanted to see an interpretation of dazzle camouflage that was both aware of the origins and purpose of dazzle: to confuse, to create a radical façade in such a way that it somehow denied or masked the presence of the ship itself. An almost irreconcilable proposition for something so large and with such a commanding presence in the context of being moored on the Thames in peacetime.



Tobias Rehberger, *Dazzle Ship London*, 2014. Photo: Chris Wainwright

The final design certainly does disguise the ship, and reinforces its function as a landmark both in central London and in the history of the First World War as one of the few remaining floating warships from that period. It gives dazzle a new context and confirms the role that artists have played in providing innovative solutions, even in the context of conflict.

Zig-zag Dazzle Ships



The Mersey ferry 'Rose' on the Mersey c.1923. From the McRoberts Collection, Maritime Archives, National Museums Liverpool, MCR/90/232

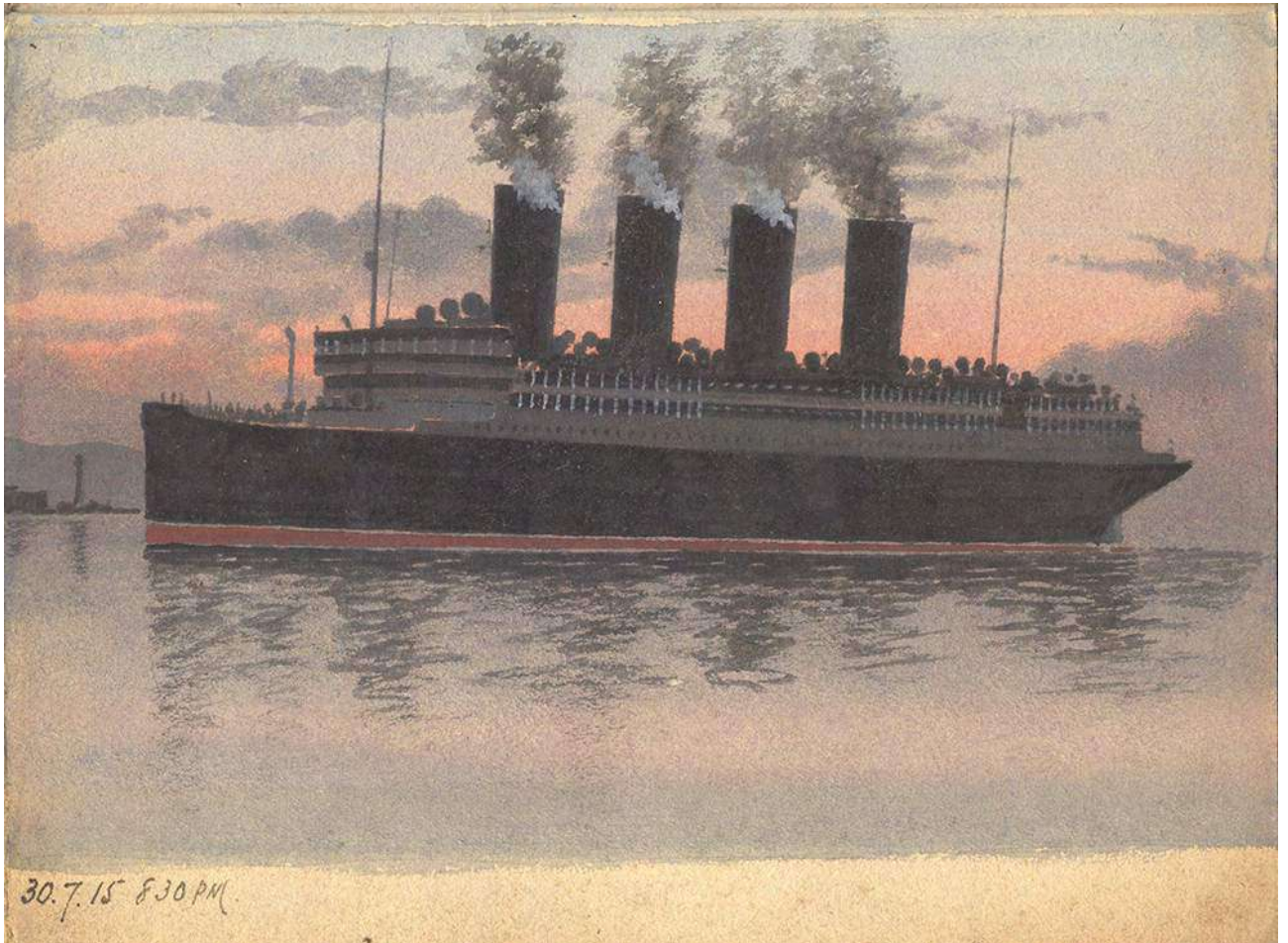
The marine artist Norman Wilkinson is generally credited with the invention of dazzle painting, but after the First World War had ended, several competing claims (including from Wilkinson himself) were submitted to the Royal Commission for Awards to Inventors, seeking recognition for the ideas and concepts behind the dazzle programme. One of the claimants was a Liverpool man called Archibald Phillips. This article puts Phillips under the spotlight, examining his claim and attempting to place him correctly within the story of dazzle painting.

A Liverpool Man

Archibald E. Phillips was born in 1878. In the 1911 census his address was 28 Earlston Road at Liscard, Birkenhead, near Wallasey Central Library. He was married, and his occupation listed as 'fine art dealer'. Phillips was in business with another dealer named Raynor MacConnal and part owner since 1893 of a chain of antique shops known as 'Phillips & MacConnal'. The head office was in the Burlington Arcade, London, with branches in Bournemouth, the Gleneagles Hotel in Perthshire and Castle Street, Liverpool.^[1] Phillips, then, was not doing too badly at all – well enough to employ at least one live-in servant at his Liscard residence. By the outbreak of the First World War, he was thirty-seven years old.

Liverpool was a key strategic port during the war. Hundreds of convoys sailed to and from the city with food and munitions essential for the war effort. The port also acted as a main hub for the movement of thousands of troops to battlefronts across the world. At Cammell Laird, Royal Navy ships were built and repaired. Many Liverpool ships were requisitioned by the Admiralty for the war effort as hospital ships and troopships. Some were converted to armed merchant cruisers. The 10th Cruiser Squadron was predominantly made up of converted liners and based in Liverpool. Against this backdrop, Phillips submitted his first proposal for ship camouflage on 9 May 1915. After the war, he stated that it was while crossing the Mersey and watching the ships passing down the river that the idea of dazzle painting came to him.^[2] He crossed the river twice a day to and from work, and so would have had ample opportunity to see and study many Royal Navy ships and converted passenger liners, some newly painted grey or black. We can only speculate about any further personal motivations, but being a Liverpool man, and living where he did so close to the river, it is likely that he knew men who had joined either the Royal or Merchant Navy, and who were risking their lives at sea against the U-Boat threat. Many Liverpool ships were lost in the war, including *Lusitania*, which was torpedoed and sunk two days before Phillips first wrote to the Admiralty.

He would have been aware of the risks faced by Liverpool ships and men, and perhaps a desire to help them in some way was in his mind on those daily trips across the river.[\[3\]](#)



RMS Mauretania on the Mersey in July 1915, sketched by Ernest W. Barrett. From collections of National Museums Liverpool, MMM.1987.118.2.15

Phillips' proposals

Phillips' first proposal on 9 May 1915 was sent to Lord Derby at the War Office. It included an explanation of how he thought colours could be used in the disguising of vessels. A number of designs were included, some described as having a 'dazzle effect'. One design used a mosaic pattern system to produce a three-dimensional stepped effect.[\[4\]](#) Phillips also spoke in the proposal of 'dazzling the eyes of the gunners of enemy submarines'.[\[5\]](#) He offered his services personally in supervising the disguising of a vessel at Birkenhead docks. However, he received a reply stating that his scheme would be 'worthless to Merchant vessels'.[\[6\]](#)

Undaunted, he wrote again on 28 May, outlining his ideas to the Earl of Balfour, First Lord of the Admiralty. A sketch illustrating one of his proposed designs was sent separately on account of its size.[\[7\]](#) He received a formal thank you for the letter but nothing.



Mauretania (I) in dazzle paint as a troopship during WW1 by Burnell Poole, oil on canvas, 1919. From collection of National Museums Liverpool, MMM.1968.184.6

Phillips did not contact anyone in authority again about his ideas until November 1917. The catalyst for this was seeing *RMS Mauretania* dazzle-painted as a troop ship, presumably on the River Mersey.^[8] By this time, Norman Wilkinson's dazzle proposal (submitted in early 1917) had been taken up, and Wilkinson had been placed in charge of a naval camouflage unit at the Royal Academy of Arts in London. Approved dazzle designs were transferred to scale plans and passed on to teams based at a number of ports around the country for application to ships. One of these teams was based in Liverpool. What a surprise for Phillips it must have been on one of his twice-daily trips on the river, to see *Mauretania* and other vessels dazzle-painted on the water. It appears to have given him an additional idea for ship camouflage, for he wrote to the Secretary of the Board of Invention and Research at the Admiralty:

I believe that something further can be done to disguise the actual size of a ship by painting the latter part of a merchantman [a ship built for commercial use but requisitioned by the Navy for war use] in the form of a much smaller ship (in dark solid colours). By this treatment the imaginary small ship, which is painted on the side of a large merchantman, will, to the onlooker, be visible from a distance and the other part be practically invisible. The intention behind this scheme is that a submarine, being already warned of the approach of a large merchantman, and lying in wait for her prey, sees what she thinks only a small prey on the horizon, and either takes the disguised ship for a smaller craft, or that his bespoke merchantman must be many miles further away than she really is, and, in this case, the submarine will not have the correct range should she open fire.^[9]

The Commission

With the end of the war came a relaxation on censorship, which allowed Wilkinson to embark on something of a publicity blitz to advertise himself as the sole inventor of the dazzle concept.^[10] He argued that his scheme was unique in its aim to confuse rather than to conceal, and that 'all the previous attempts which have been made to utilize paints as a defensive measure when dealing with ships were made with a

view to rendering them invisible'.^[11] This was disputed by numerous people, including Phillips, who submitted rival claims to the Royal Commission for Awards to Inventors. A special Committee of Enquiry was set up to hear and assess the rival claims under Admiral Farquhar of the Royal Navy. The enquiry took place in London during October 1922. Phillips was there in person, and his claim was heard on the same day as Wilkinson's and that of another claimant, Professor John Graham Kerr of Glasgow University. The enquiry seems to have captured the imagination of the media, since it was reported widely in national and local newspapers on 16 and 17 October 1922, including (unsurprisingly given a local man's involvement) in Liverpool. *The Liverpool Daily Post and Mercury* reported it at length, in an article headed 'ZIG-ZAG DAZZLE SHIPS. A LIVERPOOL MAN'S'.

ZIG-ZAG DAZZLE SHIPS.

A LIVERPOOL MAN'S CLAIM.

THREE CASES HEARD BY THE INVENTIONS COMMISSION.

From Our Own Correspondent.

LONDON, Monday.

The claim of Mr. Archibald Phillips, of the firm of Phillips and Macconnal, of Liverpool, in reference to the painting of ships during the war, was heard, with two others, by the Royal Commission on Awards to Inventors here to-day. The two other claimants were Professor Graham Kerr, Regius Professor of Zoology at Glasgow University, and Mr. Norman Wilkinson, the well-known marine painter.

Professor Kerr's case was heard first. Mr. Hunter Gray, K.C., on his behalf, explained that he submitted to the Admiralty, early in the war, a scheme in which he drew attention to the protective colouration of wild animals which rendered them inconspicuous in their natural surroundings, and suggested the colouring of ships, by strongly contrasting patches, as a means of protection from the enemy's fire. The suggestion was communicated to the Fleet confidentially in a General Order. The professor afterwards offered his services to the Admiralty, and wrote that the various trials had been made on the lines suggested.

The scheme then in use, said Mr. Hunter

CORRESPONDENT

WHAT IS WRONG WITH

Sir,—In the course of an above heading in your issue special correspondent says eight months of this year cloth were only 1,600,954, Y showing no improvement on at this rate our exports to out to be only a little more 1913, when they amounted lineal yards (equal to ab square yards.

The figures for this year lished by the Board of Trad VII.,

| | 1921 |
|----------|-------------|
| January | 249,360,400 |
| February | 244,725,500 |
| March | 251,931,800 |
| April | 186,766,700 |
| May | 241,603,800 |
| June | 192,656,500 |
| July | 177,530,400 |
| August | 212,402,800 |

Totals 1,600,954,900

From the above it will the first eight months of a showed an increase of 96 yards (say, 65 per cent indicates a total for the tw ing December 31st 1922 of 5, or 59 per cent of 1913. —Ye

5. Rumford-place Liverpo

THE COUNTRY AND GEORGE

Sir,—It is a canon of good life that one should never c

Liverpool Daily Post & Mercury, 17th October 1922, p10

Each man was represented by legal counsel – a Mr Trevor Watson appeared for Phillips, who was cross-examined. Phillips outlined the timescale of his applications (as we have seen – two in May 1915, another in November 1917) and the story of his inspiration from taking the ferry to work every day. He claimed that the dazzle design he had seen on *Mauretania* in 1917 was very similar to the design on the sketch he had sent with his second proposal on 28 May. The Admiralty claimed not to have received this design.[\[12\]](#)

The Committee found in favour of Wilkinson, who was awarded a single payment of £2,000. They appear to have been rather dismissive of Phillips' claim, and the Chairman Admiral Farquhar stated that 'it is quite obvious that this suggestion had no value at all'.[\[13\]](#) Phillips was determined to press his claim regardless, and published his ideas in a booklet entitled 'Suggestions for the Camouflage or dazzle of British Merchant Ships in the Great War'.[\[14\]](#)

A Place in History?

How, then, to assess Phillips' claim? His additional 1917 proposal, submitted in response to seeing a dazzled ship, is deeply flawed. The idea that a smaller ship painted on a ship's hull would be visible and the rest of the ship practically invisible is simply not feasible, and flies in the face of the accepted principle that it is impossible to render a ship invisible at sea.[\[15\]](#) It does perhaps show that whilst Phillips had a creative mind, he lacked the relevant scientific or artistic knowledge to translate an idea into a workable proposal.

I would view his 1915 proposals slightly differently. These pre-dated Wilkinson's but were after Kerr's (who wrote to the Admiralty in 1914). They show that (like others such as Kerr), Phillips had the idea that the painting of a ship's hull with strong contrasts of colour and shape could distort the appearance in such a way as to confuse the enemy, not to render a ship concealed or invisible (as Wilkinson claimed all other previous proposals did). His first proposal in May 1915 specifically refers to an intended dazzle effect. In this respect, his ideas were valid and pre-dated those of Wilkinson.

What can also be said, however, is that his designs were not well received or considered to be workable. Phillips does not seem to have had any scientific or military background. He had the idea – and that cannot be taken away from him – but not the ability or knowledge in the appropriate areas to translate that idea into a feasible scheme that was based on valid theory and principles. Also, it could be said that he lacked the contacts and connections to push his ideas through. Kerr had the gravitas of a major university behind him to bolster his position and make his a voice worth listening to. Wilkinson was an 'inside-man', known to the Admiralty through his service in the Naval Reserve. Both men were better positioned and also had superior skill and knowledge to translate the same basic ideas into a workable scheme. The real showdown was between Wilkinson and Kerr. Kerr's proposal for 'parti-colouring' was trialled by the Admiralty but without success. He, however, argued that his scheme was practically identical to that of Wilkinson, but was misunderstood and executed badly. He asserted that whilst Wilkinson could be credited with the efficient application and utilisation of the theory, he could not lay sole claim to the discovery and awareness of the principle.[\[16\]](#)

In their letters of rejection to claimants such as Phillips, the Committee of Enquiry made it clear that they recognised and respected their efforts, which had been 'governed by a patriotic motive and spirit'.[\[17\]](#) In the end, that is how Phillips should be remembered – as a man who wanted to help his country – and his city.

[\[1\]](#) From correspondence with David Mason, Chairman of MacConnal–Mason Gallery (formerly Phillips & MacConnal).

[\[2\]](#) Liverpool Daily Post and Mercury (hereafter LDPM), October 17th 1922, p10.

[\[3\]](#) As examples, Liverpool's Cunard Line lost thirteen of its twenty six ships during the war, The

Harrison Line lost twenty seven ships. Twelve thousand Liverpool men joined the Royal Navy during the war, and over eight thousand joined the Merchant Navy (not including those already at sea before 1914).

[4] David Williams, "Liners in Battledress" (Conway Maritime press London, 1989), p80

[5] Western Morning News and Mercury, 17th October 1922

[6] LDPM, October 17th, 1922, p10

[7] Ibid p10

[8] Ibid p10

[9] Ibid p10.

[10] See Hugh Murphy and Martin Bellamy, "The Dazzling Zoologist, John Graham Kerr and the Early Development of Ship Camouflage", The Northern Mariner/le marin du nord, XIX No 2, (April 2009), p183

[11] Norman Wilkinson, "The Dazzle Painting of Ships", read before the North-East Coast Institution of Engineers and Shipbuilders, 10th July, 1919, reprinted by order of the council, p4, Maritime Archives, Merseyside Maritime Museum, 910.WIL/R

[12] LDPM, October 17th 1922, p10.

[13] See Hugh Murphy and Martin Bellamy, "The Dazzling Zoologist, John Graham Kerr and the Early Development of Ship Camouflage", The Northern Mariner/le marin du nord, XIX No 2, (April 2009), p191

[14] David Williams, "Liners in Battledress" (Conway Maritime press London, 1989), p80

[15] Admiralty Memorandum for the War Cabinet, "Dazzle Scheme of Painted Ships", 9th October 1917, The National Archives CAB/24/28

[16] The case in favour of Kerr is argued most persuasively in the excellent article by Hugh Murphy and Martin Bellamy, "The Dazzling Zoologist, John Graham Kerr and the Early Development of Ship Camouflage", The Northern Mariner/le marin du nord, XIX No 2, (April 2009).

[17] David Williams, "Liners in Battledress" (Conway Maritime press London, 1989), p81

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