Dazzlin' Camouflage

by Hugh Musick

Today's technologies designed to reveal what is hidden—satellite surveillance, infrared body heat detectors, and sonar—make early attempts at military and naval concealment seem downright quaint. Among these early camouflage techniques, none is more unusual or charming than the British and U.S. Navies' use of "dazzle".

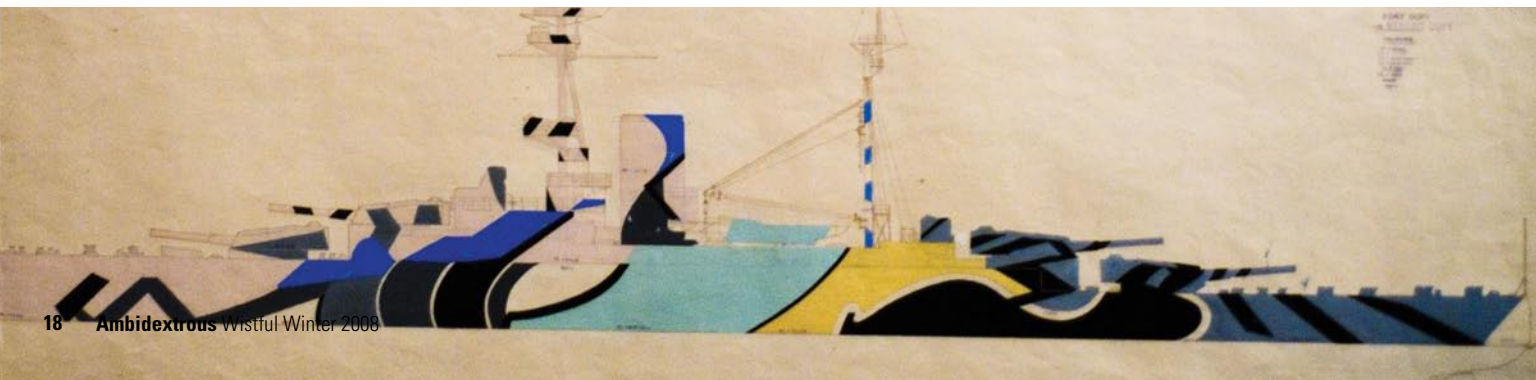
Picture a flotilla of merchant ships decorated with big bold modernist designs sailing from London. It looks like a floating piece of art straight out of the Swinging Sixties, except the year is 1917 and the only event in full swing is the First World War. As the ships sail away, one notices an interesting optical effect: the stripes, swirls, and patterns that make the ships so conspicuous when up close causes the ships to visually break apart when viewed at a distance.

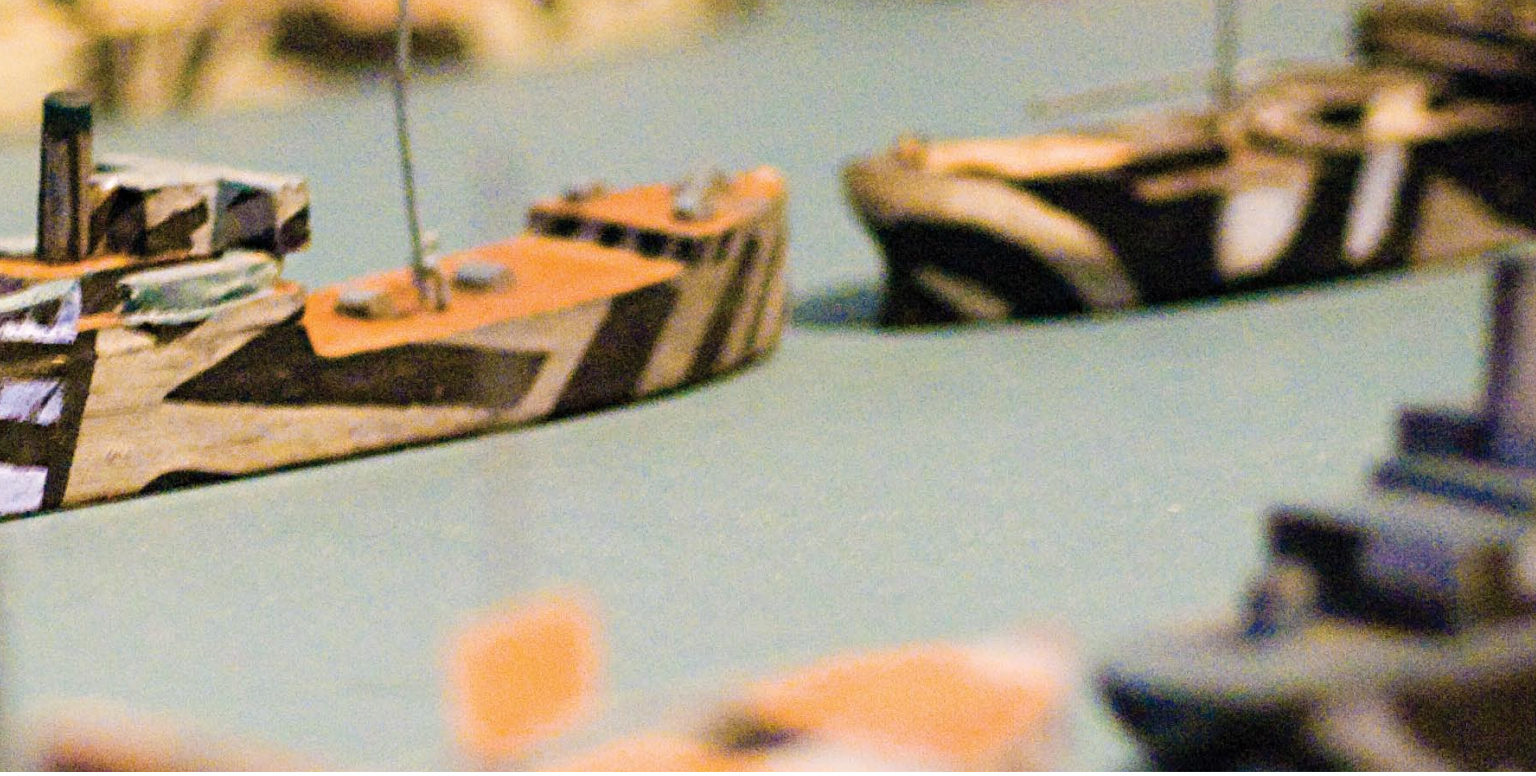
The spectacular dazzle camouflage painted on the ships was the brainchild of Norman Wilkinson, a British marine artist turned wartime lieutenant commander. Dazzle employed the use of disruptive patterns to erase the outlines of a ship's form and confound the torpedoes of German submarines. Years after the war Wilkinson explained, "The primary object of the scheme was not so much to cause the enemy to miss his shot when actually in firing position, but to mislead him when the ship was first sighted as to the correct position to take up."

Though popular press in the U.S. described dazzle patterns as "jazz painting," Wilkinson's U.S. disciple, Lieutenant Everett Warner, objected, asserting that there was nothing improvisational about the designs: "It is precisely when our work was most firmly grounded on the book of Euclid that the uninitiated were most positive that the shapes were being painted haphazard by a group of crazy Cubists".

Wilkinson's description of his systematic approach to the development of dazzle patterns confirms Warner's assertion:

> *In the initial stages a small wooden model of each ship was made to scale. On this a design was painted in wash colors for the purposes of rapid alternation. This model was then carefully studied on a prepared theatre through a submarine periscope, various sky backgrounds being placed behind her alternately. A satisfactory design having been evolved giving the maximum distortion, the model was then handed to the trained plan maker and copied on to a 1/16th–inch scale profile plan of the ship on white paper showing port and starboard side. The*





plan was then sent to the outport officer at the port at which the particular ship was lying and transferred under his supervision to the ship.

The rigor of Wilkinson's method convinced the British Navy of dazzle's effectiveness, and by the war's end 2,300 ships bore the distinctive designs. A U.S. admiral was so impressed that Wilkinson was "loaned" to the U.S. Navy. He came to Washington in early 1918, where he met with Assistant Secretary of the Navy, Franklin Delano Roosevelt. The future president described how the meeting made an impact on him and marked a noticeable shift in the understanding of camouflage as practiced by the U.S. Navy:

Up to the present ship camouflage in the United States has been carried out by a number of private individuals, all of whose systems vary, but are mainly on the order of invisibility or low visibility treatment. They have been selling their plans at so many dollars a foot run to ship owners. We had no means of testing the results in a practical way.

Moreover, many of camouflage's early practitioners had come from the world of art, and though grounded in an understanding of optical effects, were not systematic in their application of it. In time, the need to transform the practice of camouflage from an artistic orientation toward one governed by design methods gradually took root in the U.S and Europe. A journalist commenting on the role of camouflage wrote:

If the French were ingenious enough to invent it, and the Germans copy it, it is safe to say that we Americans shall be the first to systematize it. We shall make a business of it—not a cut-and-dried business, but one directed with level reasoning and touched by American humor and inventiveness.

The story of how Wilkinson developed his optical trickery is a stunning example of how the practice of camouflage developed and advanced through an iterative process that should be immediately familiar to those trained in design thinking. Although technological changes soon made dazzle painting obsolete, the methods used to develop it remain just as valid today.

Dazzle's obsolescence also serves as a reminder that design solutions are a product of their time. Reflecting on the past helps designers remember that even today's coolest innovations will be a future generation's charming relics.

Photos by Jim Harris