

***Nordic Beach* by Wyndham Lewis**

An undated oil painting by British artist Wyndham Lewis (1933-1936) underwent a technical and historical examination for the Conservation & Art Historical Analysis research project (fig. 1). A multi-analytical approach using multispectral infrared reflectography (SMIRR), handheld X-ray fluorescence (XRF), and electron microscopy with energy dispersive X-ray spectroscopy (SEM-EDX) revealed a previously unidentified *pentimento*. Because of a lack of published technical information related to Lewis' 1930s oil painting practice, two additional pictures on long-term loan to the Courtauld Gallery were also examined for comparative analysis. This report aims to discuss the results of the technical examination and art historical investigation of *Nordic Beach* including the characterisation of the hidden *pentimento*.

Nordic Beach was first exhibited in Lewis' solo exhibition, 'Infernos: Drawings and Paintings by Wyndham Lewis' held at the Leicester Galleries in December 1937. The exhibition marked his first major show since 1921. The exhibition catalogue indicated *Nordic Beach* was exhibited alongside 23 oil paintings and 30 works on paper in this ambitious show. The painting remained unsold during the exhibition and was subsequently purchased by Ernest Brown & Phillips of the Leicester Galleries. It reappeared for sale by the Leicester Galleries at the Carnegie Institute exhibition in Pittsburgh, Pennsylvania in October 1938. The painting is not mentioned again in the literature until Lewis' important Tate retrospective, 'Wyndham Lewis and Vorticism' in 1956. By 1971, *Nordic Beach* is documented in the private collection of J.F. Cullis and today the painting is on long-term loan to the Courtauld Gallery.

Although *Nordic Beach* is undated, it has been previously suggested by Walter Michel that it belongs to a group of oil paintings finished between 1933-1936 and painted for the Leicester Galleries solo exhibition.¹ In fact, *Nordic Beach* shares a number of stylistic, thematic and material similarities with Lewis' other oil paintings produced in the mid-1930s. The painting

¹ Walter Michel, *Paintings and Drawings by Wyndham Lewis*. Berkely, CA: University of California Press, 1970, 120.

depicts a couple resting by the beach, which is suggested by simple addition of blue wash around the figures. A sense of depth in the composition is implied by the inclusion of the geometric architectural details in the upper left corner of the painting. Similar imagery can be found in other oil paintings of the time, such as *Two Beach Babies* (1933), which portrays two female figures or 'monads' bathing at the beach, against the backdrop of abstract building structures. The reclining female figure in *Nordic Beach* is also reminiscent of another figure featured in *Sheiks Wife*, painted between 1933-6. The depiction of the figures in a semi-abstract style, the use of clearly delineated contour lines and simplified forms, and the predominant application of a single colour to generate certain atmosphere in *Nordic Beach*, all attest to visual inventions typically found in Lewis' paintings of this period.

The technical examination of two other oil paintings on loan to the Courtauld Gallery, *Tank in Clinic* (1937) and *Three Players on a Stage* (1937), both of which were also included in Lewis' 1937 exhibition revealed a consistent use of materials between all three paintings (figs. 2, 3). The canvas support and stretcher bars identified in *Nordic Beach* matched those used for *Tank in Clinic* and *Three Players on a Stage* (fig. 4). In each case Lewis used a commercially prepared, pre-primed canvas affixed to a stretcher with mortise and tenon joints and secured with keys at each corner. The constituent dimensions of all three stretchers measured 2cm x 1.5cm thick with 1cm wide keyhole slots. The canvas was secured to the stretcher bar using flat-headed nails spaced approximately 5-8cm apart in a single row. The canvas weave count, 15x16 threads per cm, was the same in all three paintings and the canvas folds at each of the four corners were also identical. These similarities suggest a similar origin for all three commercially prepared stretchers. A maker's stamp on the reverse of *Tank in Clinic* therefore probably indicate that all three stretchers were obtained from the London colourman and artists supplier Lechertier Barbe who was located at 95 Jermyn St, West London in the 1930s (fig. 5).²

² *British artists' suppliers: 1650-1950*. National Portrait Gallery [accessed 21 January 2014]. <<http://www.npg.org.uk/research/programmes/directory-of-suppliers/l.php>>

Elemental analysis using SEM-EDX revealed *Nordic Beach* was painted on commercially prepared priming. Non-invasive handheld XRF carried out on *Tank in Clinic* and *Three Players on a Stage* also suggested similar grounds were used. The ground layer was applied in two discreet layers. Peaks for calcium, barium and sulphur were identified in the lower ground layer suggesting a chalk ground with barium sulphate extenders, whereas peaks for calcium, phosphorus, zinc and lead were identified in the upper layer suggesting a grey-coloured priming containing chalk, a mixture of zinc and lead white, and bone black. It is not unusual to find barium sulphate in Lewis' paintings of the time because it was a common additive in commercially prepared primings in the 1930s (fig. 6).

Elemental analysis also identified a variety of pigments comprising a diverse palette of commercially prepared pigments typical to the 1930s. Lewis' palette included a variety of earth pigments: chrome yellow, cerulean blue, viridian, French ultramarine, a cobalt and manganese violet, and a copper arsenate green (table 1). The identification of pure zinc white and mixtures of zinc and lead white pigment in different colours suggested certain pigments were manufactured with different white pigments. For example, a brown umber was identified in the *pentimento* that contained both zinc and lead white while lead white alone was identified in a dark blue from a different area. Other paints contained mixtures of pigments and extenders. For example, the red used to paint the two figures consisted of a mixture of cadmium red, vermilion, red earths with additives and extenders. The use of inert extenders and red earth pigments with cadmium red may be indicative of cost-saving manufacturing techniques. Indeed, Lewis' chronic financial difficulties are well documented during this period.

Characterisation of a hidden *pentimento* in *Nordic Beach*

Although Lewis' re-use of canvas has been documented in other oil paintings, the hidden *pentimento* in *Nordic Beach* has not been previously characterised (fig. 7). Its possible existence was raised only because contour lines, unrelated to visible compositional

elements, were visible across the surface of the painting in raking light. A false-colour infrared composite image from the multispectral image slices revealed some of the major compositional elements of the *pentimento*, which suggested an intact but possibly unfinished still-life painting consisting of flowers set atop a small, round table. Similar to the way Lewis included and portrayed props in his celebrated portrait of Ezra Pound (1939), it is likely that the lower painting of *Nordic Beach* was an illustration of everyday objects, such as newspaper, glass jar and ashtray placed on a table. In fact, this two-tiered wooden table appears frequently in Lewis' works, in both large oil paintings and small pencil sketches. According to Cy Fox, a major collector of Lewis' works, the artist purchased this art-deco style table for his flat in Notting Hill Gate (fig. 8).³ In photos taken by Douglas Glass in the 1950s, for instance, one sees the artist casually posing in front of the table.

The *pentimento* appears to depict a still-life scene as the focal point of the composition in a manner not dissimilar to the ones found in Lewis' drawings on paper, executed in the 1930s. Instead of favouring the depiction of the sitter, as in his oil portraits, drawings such as *Full Table* (1938), *The Room* (1936) and *The Pot of Flowers* (1936) prominently feature still-life imagery reminiscent of the compositional elements identified in the *pentimento* in *Nordic Beach*. Such compositional differences suggest that the upper and lower layers of the painting are unrelated. Moreover, the characterisation of the *pentimento* provides an insight into understanding Lewis' artistic practice at this period. Unlike other paintings by Lewis, a number of which have been identified as repainted over his earlier vorticist work, *Nordic Beach* is one of the few examples from the 1930s that clearly indicate his practice of wholesale repainting over a figurative, still-life composition.

Analysis of two paint samples in cross section provided useful information pertaining to the palette in the hidden *pentimento* (fig. 9). In sample 1, obtained from the red background, elemental analysis revealed peaks for manganese, zinc and phosphorus in the lower violet paint layer associated with the *pentimento* suggesting the presence of a manganese violet

³ Cy Fox, interview by author. Email. October 9, 2013.

pigment mixed with pure zinc white and bone black. The infrared images identified that this paint sample was obtained from an area associated with the wooden table in the *pentimento* suggesting it may have been painted to appear a warm dark colour.

A second sample revealed a mixture of synthetic ultramarine blue mixed with pure zinc white and brown earths in the *pentimento*. The location of this sample could also be identified using the infrared images and suggested Lewis used a bright blue paint to 'outline' the vertical leg of the wooden table in a manner similar to the cobalt blue he used to delineate both of the figures in the visible composition.

Application of neutral priming layer or any significant dirt layer could be identified between the visible composition and *pentimento* in the paint samples, indicating Lewis probably repainted over the still life shortly after the initial painting of the *pentimento*. Alternatively, Lewis may have abandoned the lower composition in an unfinished state before reworking the canvas. When considering other paintings that have been repainted without the use of a priming layer such as *Praxitella* (1920-21), *Portrait of the Artist as the Painter Raphael* (1920-21) and *The Portrait of Richmond Noble* (1923), it seems likely that the content of each lower composition does not have any direct relation to that of the final, repainted work above. It is also unlikely that the artist based his upper composition on either the colours or forms of the lower painting. Although in the case of *Nordic Beach*, there are overlaps between elements in the lower painting to those in the upper, they appear accidental rather than intentional.

Lewis' practice of overpainting, however, has had direct consequences in terms of the condition of his reworked paintings. Paul Edwards described the condition of the *Portrait of Richmond Noble* (1923) as having 'a great deal of cracking of the paint surface...which seems to be the result of Lewis making the portrait on a canvas that had already been used', small raised cracks visible on the surface of *Nordic Beach* are probably the result of Lewis'

practice.⁴ Through a historical and technical investigation of *Nordic Beach*, it was possible to not only trace the provenance, confirm the attribution and dating of the painting but also to gain useful information regarding Lewis' materials and painting practice. In particular, scanning multispectral infrared reflectography (SMIRR) paired with XRF and SEM-EDX was found to be a powerful tool for the identification of pigments and for the visualisation and characterisation of the hidden *pentimento*. Compositional details such as a bouquet of flowers as well as a historically-significant, two-tiered wooden table were identified during the examination. *Nordic Beach* and its under painting serves as an important example which demonstrates Lewis' use of wholesale repainting in the 1930s over a possibly unfinished still-life painting.

⁴ Paul Edwards, 'Portrait of Richmond Noble.' *The Journal of Wyndham Lewis Studies* 3, (2012): 1-3.

Table 1:

Painting	Area Analysed	Elements Identified (XRF)	Elements Identified (SEM-EDX)	Assessment
Nordic Beach	Lower ground layer	n/a	Ca, Ba, S	Chalk grounds, barium sulphate
	Upper ground layer	Ca, Pb, Zn, Fe, Ba	Pb, Zn, Ba, S, Mg, Ca, P	Chalk grounds, bone black, barium sulphate, zinc white, lead white
	White	Pb, Zn, Fe (Ba)		Lead and zinc white, trace iron oxide, extender
	Blue	Co, Sn, Pb, Zn, Fe (Cr)		Cerulean blue, lead and zinc white, viridian?
	Browns	Fe, Mn, Pb, Zn, (Ca, Cr)	Fe, Mn, Ca, Pb, P, Si, Al, Mg, O	Umber, bone black, lead white aluminosilicates
	Red (background)	Fe, Mn, Pb, Zn, (Ca, Cr)	Fe, Al, Si, K, Pb, Mn, Ca, P	Red earth pigment, lead white, bone black, umber, trace zinc white
	Red (in figure)	Hg, Zn, Fe, Ca, (Pb, Ba)		Vermilion, iron oxide, zinc white.
	Yellow	Cr, Zn, Fe, Hg (Pb)	Pb, Cr, Fe, Zn	Chrome yellow with zinc white, iron oxides (Hg from red paint below)
	Blue-green (pentimento)		Cr, O, Pb, Ca, Fe, Mn, Si	Viridian, lead white, umber & calcic extenders
	Dark blue (pentimento)		Na, Al, Si, S, Pb	French ultramarine, lead white
	Purple (pentimento)		Mn, Ca, Zn, P	Manganese violet, bone black, zinc white
	Area Analysed	Elements Identified (XRF)	Elements Identified (SEM-EDX)	Assessment
Tank in Clinic	Ground layer	Ca, Pb, Zn, Fe, Ba		Chalk grounds, barium sulphate, lead white, zinc white
	Dark blue	Si, Al, Ca, Cu, As, Zn, Pb, Fe (Cr)		French ultramarine, a copper arsenate green, viridian, zinc white and trace lead white
	Green	Cu, As, Pb, Cr, Fe, (Co, Zn)		Copper arsenate green, viridian, lead white and trace zinc white
	Red	Fe, Pb, Ca, Cd, Se (Zn, Hg, Ba)		Red earth pigment with trace cadmium red & vermillion, lead white, trace zinc white & extender
	Yellow	Cr, Zn, Fe, Ca,		Chrome yellow with zinc white
	Area Analysed	Elements Identified (XRF)	Elements Identified (SEM-EDX)	Assessment
Three Players on a Stage	Ground layer	Ca, Pb, Zn, Fe, Ba		Chalk grounds, barium sulphate, lead white, zinc white
	White	Pb, Ca (Fe, Zn)		Lead white, extender (Fe, Zn may be from ground layer)
	Red	Cd, Se, Pb, Fe, Ba (Zn, Hg, Ca)		Cadmium red with iron oxide, vermillion, lead white, trace zinc white & extender
	Green	Cr, Zn, Pb, Fe, Ba, Ca		Viridian, zinc and lead white, extender
	Orange	Cd, Fe, Pb, Hg, Ca (Zn)		Cadmium yellow with vermillion, lead white, traces of zinc white
	Brown	Fe, Zn, (Pb)		Brown earth, zinc white

Appendix: Experimental

X-ray radiography (XRR) was carried out in the Conservation & Technology Department at the Courtauld Institute. Analogue X-ray plates were developed and digitised.

Non-invasive XRF analysis was carried out using a handheld Bruker Tracer III-SD spectrometer. The Tracer III-SD is outfitted with a rhodium (Rh) X-ray tube operating at a maximum voltage of 40kV. The device is outfitted with a Peltier-cooled XFlash® silicon drift detector with an operating area of 10mm² with an average resolution of 145eV at 100,000cps to detect incoming secondary X-rays. Preliminary calibration readings were carried out on a 2mm thick Perspex sheet to obtain a reference of device artefact peaks before analysis. Spectra were gathered at 40keV, a current of 11µA under vacuum for 60s.

Non-invasive visible (VIS) to near infrared (NIR) scans were carried out by MOLAB, part of the EU-ARTECH project funded by the 6th Framework Programme. The optical head of the SMIRR device illuminates the painting using a current-controlled, low-voltage halogen source providing a continuous diffuse reflectance from the surface of the painting. The optical head simultaneously collects incoming backscattered diffuse radiation using three Si and 12 InGaAs photodiodes. A single InGaAs photodiode detects radiation between 800-1700nm and the remaining 14 photodiodes are for multispectral detection split into 14 visible and NIR bands between 800-2300nm at an operating spectral resolution of 50-100nm.

Microsamples were taken from the small losses, embedded in resin, and analysed in cross section guided by the results obtained using XRF and NIR imaging. Elemental analysis was carried out using a Hitachi S4000 scanning electron microscope.

Images:



Figure 1: *Nordic Beach*, 1933-36, oil on canvas, 46.1 x 38.1 cm, Courtauld Gallery

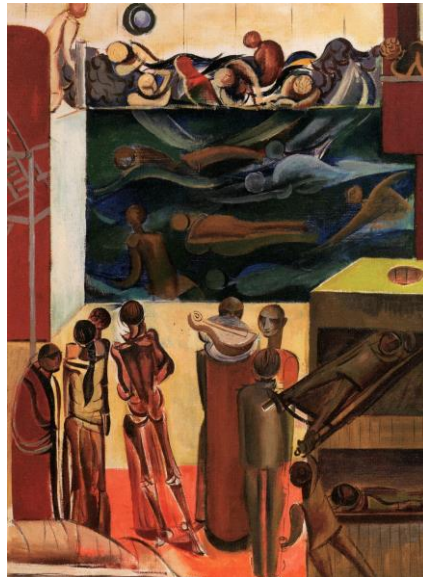


Figure 2: *Tank in Clinic*, 1937, oil on canvas, 68.5 x 51 cm.



Figure 3: *Players On A Stage (Actors on a Stage)*, c.1937, oil on canvas, 68 x 51 cm.

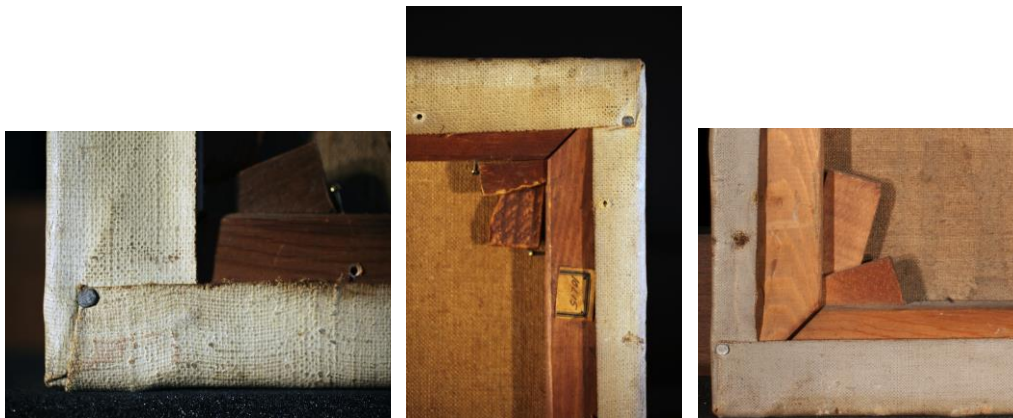


Figure 4: (left to right) Reverse of *Tank in Clinic*, *Three Players on a Stage* and *Nordic Beach*.



Figure 5: *Tank in Clinic* (reverse), 1937, oil on canvas, 68.5 x 51 cm (stamp reads: “Lechertier Barbe Ltd./ 95 Jermyn Street/ London SW2”)

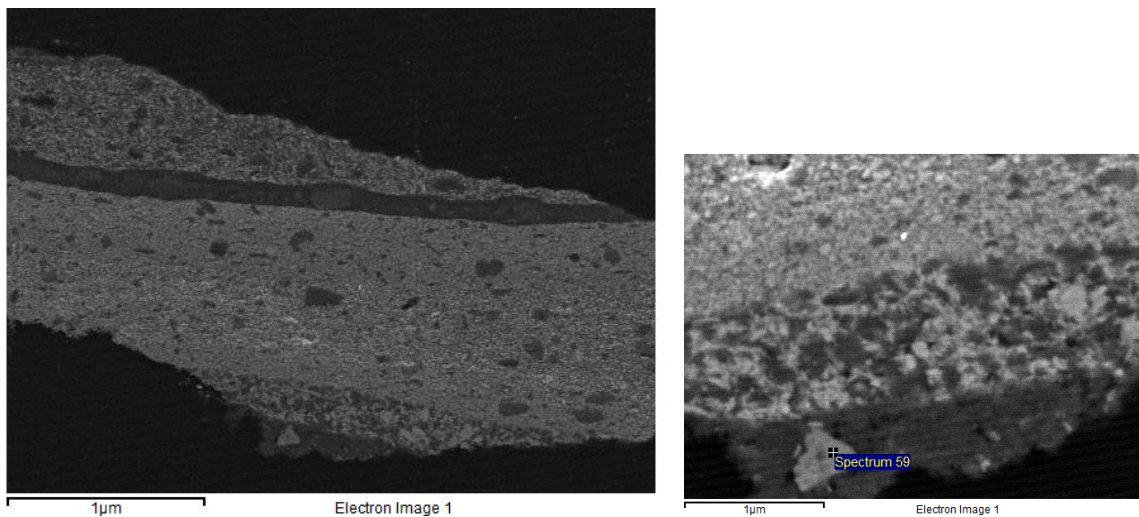


Figure 6: SEM backscatter image and detail (right) showing the two layers of the commercial priming layer. The upper priming layer appears brighter in the backscatter due to presence of lead. The Lower layer is darker and contains chalk with barium sulphate.



Figure 7: Infrared false-colour composite (CH1:2265nm, CH2:1930nm, CH3:1700nm)



**Figure 8: Lewis' wooden table, C.J Fox Collection, University of Victoria Special Collections
(photo credit: University of Victoria Special Collections)**

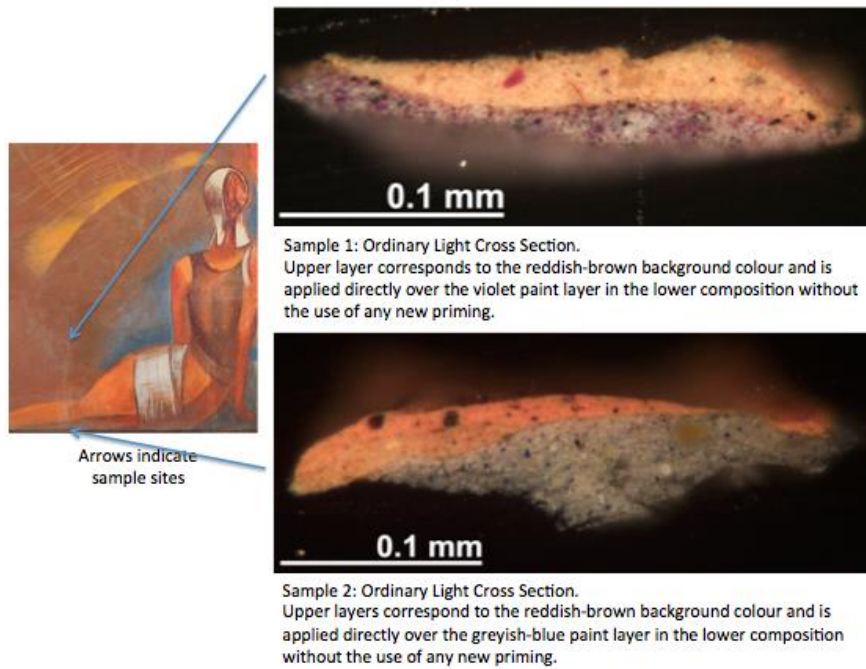


Figure 9: Cross Sections with locations (left)

