



Fig. 1a
REMBRANDT,
The Standard Bearer,
1636.
Oil on canvas,
120.5 x 97.5 cm.
Signed and dated,

lower left in dark
brown paint:
Rembrandt f/1636.
Amsterdam,
Rijksmuseum,
inv. no. SK-A-5092.

Short Notice

Rembrandt's *The Standard Bearer*: New Findings from Imaging Analyses

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Rembrandt van Rijn (1606-1669) was one of the most innovative artists of his time. *The Standard Bearer* dated 1636 (Rijksmuseum) is remarkable for the forceful handling of the paint and dramatic treatment of light and shadow (fig. 1a). Compared to the tightly painted portraits of Marten Soolmans and Oopjen Coppit from just two years earlier, *The Standard Bearer* is considered to represent a pivotal moment in his stylistic development. Perhaps Rembrandt even hoped this picture would help him to secure a lucrative commission for a militia piece, and it may have played just that role in his selection by the civic guardsmen of District II to portray them in *The Night Watch* of 1642 (Rijksmuseum).¹ Stylistically, *The Standard Bearer* relates to a group of almost life-size half-length figures painted around 1635, especially *Minerva* dated 1635 (Leiden Collection) and *Saskia van Uylenburgh as Flora* dated 1635 (National Gallery, London). Like these life-size goddesses, *The Standard Bearer* is depicted close to the picture plane against a schematic background, which greatly enhances its monumental effect.

The condition inspections of the picture that were carried out in 2019 at the beginning of the Rijksmuseum's Rembrandt-Velazquez exhibition, and in early January 2022 prior to its acquisition, suggested that the paint was in an

< Purchased in January 2022 by the Dutch State with the support of the members of the Rembrandt Association (thanks in part to its Stortenbeker Fonds, A.M. Roeters van Lennep Fonds, Nationaal Fonds Kunstbezit, Nationaal Fonds 1930, Acquoy-Nairac Fonds, Mevrouw dr. E. Frederiks Fonds, Mevrouw J.J. den Boer-den Herder Fonds, Cleyndert Fonds, Van Rijn Fonds, Saskia Fonds, Fonds voor Klassieke Beeldende Kunst, Themafonds 17de-eeuwse schilderkunst, Warning-Meijaard Fonds, Daan Cevat Fonds, the annual contribution of the Prins Bernhard Cultuurfonds and additional donations from members), the Rijksmuseum Fonds (Hans & Hedy de Klerk, Conrad Whelan 42 Fund, Anita Nijboer Fonds, the International Circle and other private donors) and The Friends Lottery.

excellent state with little or no abrasion or paint losses. But were there aspects about the condition of the painting that could not be seen with the naked eye? It was suspected that many of the brown areas in the painting had discoloured over time, as is known to frequently occur in many of Rembrandt's paintings. It was also important to identify the pigment composition of the white standard, as this has been associated with the *Witte Vendel*, one of the four shooting companies in Delft located in the district where the possible first owner of the painting lived.² Importantly, the acquisition by the Rijksmuseum meant that the picture could be studied in detail for the first time.

To address these and related aspects, the painting was investigated in the Rijksmuseum between February and April 2022 with many of the same techniques that were used to study *The Night Watch*. This included x-radiography, infrared reflectography (IRR), macro-x-ray fluorescence imaging spectroscopy (MA-XRF), and reflectance imaging spectroscopy (RIS), coupled with high-resolution photography, and examination of the paint surface with the stereomicroscope. The goal of the research was not only to better understand the condition of the painting, but also to shed light on the significance of this painting in Rembrandt's stylistic development.



Fig. 1b
REMBRANDT,
The Standard Bearer,
(fig. 1a), cobalt (Co-K)
MA-XRF map which
records the presence

of smalt along with
the elements nickel
and arsenic (Ni-K and
As-K MA-XRF maps
not shown).

Canvas, Ground and Palette

The Standard Bearer is painted on a single piece of plain weave canvas that currently measures 120.5 by 97.5 cm.³ Inspection of the x-ray of the painting immediately confirmed that in the past the composition had been slightly expanded on all four sides as a result of flattening of the original tacking edges that were once folded over the strainer. The tacking edges and holes associated with the original attachment of the canvas to its strainer are clearly visible in the x-ray and lead MA-XRF map (fig. 2).

The canvas is prepared with a traditional double ground common to Rembrandt's canvas paintings from the sixteen-thirties, including *The Anatomy Lesson of Dr Nicolaes Tulp* dated 1632 (Mauritshuis) and the portraits of Marten and Oopjen dated 1634 (Rijksmuseum and Musée du Louvre). The lower ground is a red earth, while the upper ground contains mostly lead white, as indicated by the lead MA-XRF map (fig. 2). Both ground layers are visible with the stereomicroscope in tiny losses and cracks throughout the picture. Only in the loosely painted areas of the background, particularly at the lower left and lower right, can hints of the light-coloured ground be discerned. In the figure, the light ground is covered by a painted sketch or undermodelling in brown tones that is frequently left exposed in the shadow areas (visible in high-resolution visible light photograph).

The pigments identified in *The Standard Bearer* on the basis of their elemental composition – and confirmed by RIS – are the same as we frequently

encounter in Rembrandt's paintings: lead white, lead-tin yellow, bone or ivory black, red, yellow and brown earths, along with vermilion, smalt and azurite.⁴ On the basis of the presence of large amounts of calcium, a chalk-based yellow lake can be assumed. The co-presence of potassium, sulphur and calcium in the MA-XRF maps also suggests that red lake(s) were used in many places, including the baret and shadows of the face.

Discoloured Costume

Previous publications, including the *Corpus of Rembrandt Paintings*, have stressed the sober or limited nature of the palette in this painting, suggesting that the brown and grey tones that dominate the costume were deliberate.⁵ Research, however, shows that the grey and brown colours of the entire costume of *The Standard Bearer* are in fact the result of discolouration of the blue glass pigment smalt, and the fading of possibly yellow and red lake pigments. The thickly applied translucent brown paint of the costume, baret and large feather contain high amounts of smalt, as indicated by the co-presence of the elements associated with the cobalt ore: cobalt, nickel and arsenic in the MA-XRF maps (fig. 1b).⁶ The shadow areas of the figure also contain a lot of calcium, suggesting that the smalt was mixed with a chalk-based yellow lake, now faded, to make a greenish tone. As a result of the discolouration of both pigments, the vigorous brushwork in the shadow areas – visualized in the cobalt MA-XRF map – can no longer be seen with the naked eye (figs. 3a-c).

Fig. 2
REMBRANDT,
The Standard Bearer
(fig. 1a). Detail lead
(Pb-L) MA-XRF map
showing the original
tacking edges that
were flattened and
incorporated into the
picture plane.





a.



b.



c.



d.

Smalt is the most important blue in Rembrandt's paintings and is used not only for its blue colour, but also mixed with red (lakes) to make purple, and with yellow pigments to make green, and to enliven his brown mixtures. He also uses smalt to thicken his paint and to make it more translucent and dry faster. Smalt is used extensively in *The Night Watch* – mixed with bone or ivory black and earth pigments in the brown architecture in the background, combined with red lakes in the purple costume of the shooting

musketier, in the blue-tasselled decoration on Lieutenant Willem van Ruytenburch's costume and partisan and, like *The Standard Bearer*, mixed with chalk (probably associated with a yellow lake) in the shadow of the drummer's green sleeve.⁷ Over time smalt mixed with an oil binding medium tends to lose its colour, changing areas of colour into a murky brown. Unfortunately, there is little intact blue smalt left in either *The Night Watch* or *The Standard Bearer*.⁸

Figs. 3a-d

REMBRANDT,
The Standard Bearer
(fig. 1a)

- a. Detail of the sleeve showing the prominent wavy brushstrokes in the lit part of the sleeve.
- b. Detail cobalt (Co-K) MA-XRF map associated with smalt revealing the vigorous brushwork in the shadow area of the sleeve.
- c. Detail calcium (Ca-K) MA-XRF map thought to be associated with a now faded chalk-based yellow lake.
- d. Detail tin (Sn-L) MA-XRF map associated with the pigment lead-tin yellow used for the bright highlights in the upper part of the sleeve.

Only in the illuminated part of the costume of *The Standard Bearer*, the upper sleeve and right hip, is the smalt better preserved due to the presence of lead-containing pigments in the paint. Here the wavy brushstrokes of light green and yellow, a mixture of lead-tin yellow and smalt, are visualized in the lead and tin MA-XRF maps and would have made a much more appealing combination with the once greenish tone of the costume (fig. 3d).

The baret, which now appears murky grey-brown, is also discoloured and would have had a purplish tone, as it too is painted with smalt, in this case probably mixed with a red lake, as indicated by the co-presence of potassium, sulphur and calcium in the MA-XRF maps. Both pigments are now degraded, the smalt as a result of chemical interactions with the oil binding medium and the lake from exposure to light. The lit edges of the flaps of the baret are delineated with streaky pink brushstrokes that would have complemented the once purple colour of the baret. That these strokes contain vermilion – visualized in the mercury map – accounts for their pink appearance and better state of preservation.

The copper-containing, greenish blue pigment azurite was only identified in the smaller green feather, and at the end of the sash hanging over

his back. Azurite is more often found in Rembrandt's early work, used in small quantities in mixtures to create cooler tonalities, for instance in the flesh paint and in the dark paint of the cast shadow in the background of the portrait of Marten Soolmans from 1634.⁹ In *The Night Watch*, azurite was used for the brighter blue accents in the tasselled decoration in Willem van Ruytenburch's costume and partisan. Typically, in his later works azurite is replaced by smalt, and if present, was added to aid in the drying of the paint.

White Standard

The broad brushstrokes of light brown and grey used to roughly indicate the folds and the decorative pattern at the top of the standard are a mixture of yellow ochre and black applied on top of the lead white layer of the banner. Using MA-XRF imaging and RIS, the ochre was identified as goethite based on its characteristic spectral feature.¹⁰ A lively flourish scratched into the wet brown paint hints at a possible inscription, but no letters can be made out (fig. 4). Considering lead white, black and ochre are stable pigments that do not generally discolour, a white standard was clearly intended. The possibility exists therefore that it was indeed chosen to reflect the original owners' residence in Delft's White District.

Fig. 4
Detail of the decoration in the upper part of the white standard in REMBRANDT, *The Standard Bearer* (fig. 1a).



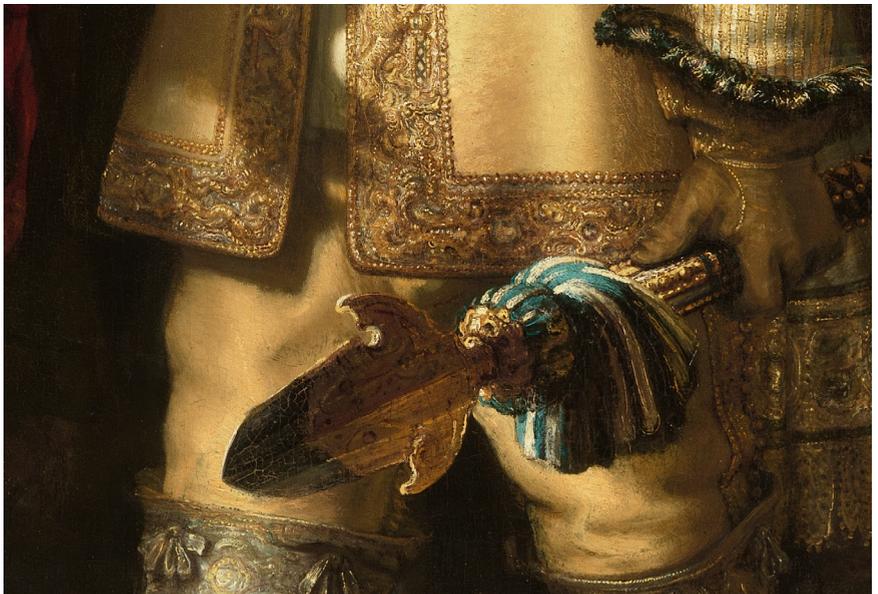
Illusion of Depth

In addition to the innovative pigment mixtures, the contrast of the dynamic brushwork in the figure with the smoother paint of the banner and the schematic rendering of the background plays an essential role in the way Rembrandt achieved such a convincing illusion of depth in *The Standard Bearer*. This is heightened by the use of

strong lights and pronounced texture in illuminated areas of the figure, such as the decoration on the dagger and the gold braiding on his coat that are built up with thick pastose touches of yellow ochre, lead white and lead-tin yellow, identified with RIS, and made visible in the iron, lead and tin MA-XRF maps respectively. The illuminated foreground of *The Night Watch* is even

Figs. 5a, b

- a) REMBRANDT,
The Standard Bearer (fig. 1a),
detail of the
dagger and cast
shadows on
his costume.
- b) REMBRANDT,
The Night Watch,
1642.
Oil on canvas,
379.5 x 453.5 cm.
Amsterdam,
Rijksmuseum,
inv. no. SK-C-5;
on loan from
the City of
Amsterdam.
Detail of Willem
van Ruytenburch's
partisan and
cast shadow of
Banninck Cocq's
hand on his buff
coat.



more elaborately worked up, such as the richly decorated details of Willem van Ruytenburch's buff coat, gorget and partisan. Certainly, the scattered light reflected from the highly textured surface of these details adds to the three dimensionality (figs. 5a, b).¹¹

In *The Standard Bearer* the light dark contrasts, especially the use of cast shadows, the passages of reflected light on the face and banner, and the subtle tonal graduations in the banner also help create a strong three-dimensional effect. Again, similarities to *The Night Watch* in the rendering of light are striking, especially the strong illumination from the left and such details as the shadow cast by the little finger of the standard bearer on his costume and the dramatic shadow cast by Frans Banninck Cocq's hand on Willem van Ruytenburch's coat in *The Night Watch* (figs. 5a, b). Foreshortening, a *tromp l'oeil* device Rembrandt employed in paintings around this time to enhance the illusion of depth, is also used in a similar manner in both paintings, in the way *The Standard Bearer's* raised elbow and the tip of Van Ruytenburch's partisan in *The Night Watch* appear to project beyond the pictorial plane.¹²

Treatment History

The MA-XRF maps also provide new information about the condition and past treatment of the painting. Until recently no documentation about the treatment history of the painting was known. Thanks to the archival research of Marie Mundigler we learned that the painting was cleaned and restored in 1958 by Jan Cornelis Traas (1898-1984), the Dutch restorer who worked for the Mauritshuis between 1931 and 1962. He also occasionally worked on paintings from other state and private collections. A short notice that appeared in the major Dutch newspapers on 22 September 1958 refers to the cleaning of the painting at the request of Baron Élie de Rothschild, the then owner (fig. 6).¹³

MAANDAG 22 SEPTEMBER 1958

Rembrandts Vaandeldrager in Den Haag gerestaureerd



Tot 11 oktober a.s. is in de tweede Rembrandtzaal van het Mauritshuis de „Vaandeldrager“ van Rembrandt uit het jaar 1636 tentoongesteld. Dit in Nederland onbekende schilderij — al in de tweede helft van de 18e eeuw bevond het zich in het buitenland — behoort tot de verzameling van Baron Élie de Rothschild te Parijs en werd op zijn verzoek door de restaurator van het Mauritshuis, de heer J. C. Traas, gereinigd. De vaandrig draagt de trekken van Rembrandt zelf. Bijzonder fors en zeker staat de figuur in zijn Hongaars aandoend uniform met hermelijnen dolman voor de toeschouwer.

Rijk en G.U. van Amsterdam
Nog geen exploitatiebijdrage voor 1959

Naar aanleiding van het voorlopig verslag der Eerste Kamer over het ontwerp van wet houdende voorlopige subsidieregeling voor de kosten van huisvesting van de gemeentelijke universiteit te Amsterdam zegt de minis-

Fig. 6

One of the many notices that mentions the cleaning and restoration of the painting by Jan Cornelis Traas in the Mauritshuis (*Nieuwe Haarlemsche Courant*, 22 September 1958, Delpher.nl)

Traas's 1958 intervention probably included cleaning, filling, retouching and revarnishing given that the glue lining and stretcher appear to date from the nineteenth century. Flattening of the tacking edges would also have occurred at the same time as the lining. The semi-transparent retouching that extends in long, narrow strokes from the edges over the background, although difficult to discern with the naked eye and in ultra-violet light, is clearly visible in the cadmium, chromium and barium MA-XRF maps associated with modern pigments such as cadmium yellow, barium sulphate and chrome yellow that Traas must have used. The strongly yellowed appearance of the natural resin varnish, which further distorts the colour balance in the painting, also suggests that Traas may have used a tinted varnish, as he was sometimes known to do.¹⁴

Conclusions

Examination of *The Standard Bearer* using advanced spectral imaging techniques, provides significant new information about the condition of the painting, its treatment history, original appearance and composition of the paint. It is confirmed that the banner was intended to be white. Other important findings that affect the painting as it appears today, are the discolouration of smalt and lakes in the brown and grey areas of the costume and baret. It can be concluded that the now dark brown costume of *The Standard Bearer* was originally more colourful: the costume more greenish and the baret probably purplish.

Investigation of the materials and methods Rembrandt employed in *The Standard Bearer* indicates that the picture represents an important stage in his stylistic development. The freer and broader handling, together with the sophisticated combination of pigments that includes smalt and lakes chosen for their bulk and trans-

lucency as well as their colour, anticipates not only *The Night Watch* but also Rembrandt's late paintings that are characterized by their broad handling and abundant use of these complex mixtures with which Rembrandt was able to achieve subtle variations of colour even in the darkest tones.

Given the changes in appearance that many of Rembrandt's paintings have undergone over time, the benefits of gaining new information from advanced imaging techniques such as MA-XRF and RIS is significant. In the future, further interpretation of the research data will shed more light on the presence and type of lake pigments, the composition of the flesh paints and the underlying sketch layer, along with many other aspects.

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NOTES

- 1 Jonathan Bikker, 'Rembrandt, De vaandel-dragger – deel 2', in H. Lootsma (ed.), *De Vaandeldrager van Rembrandt*, The Hague 2022 (Vereniging Rembrandt/Rijksmuseum), pp. 44-65, for the white banner see pp. 58-61.
- 2 *Ibid.*, p. 59.
- 3 The dimensions 118.8 x 96.8 cm are the 'sight' size of the painting measured in its frame, as cited in Josua Bruyn et al., *A Corpus of Rembrandt Paintings*, vol. III: 1635-1642, The Hague 1989 (Stichting Foundation Rembrandt Research Project), p. 225. For the complete entry see pp. 224-31.
- 4 RIS is useful to identify organic pigments, and to distinguish between different copper-containing pigments, such as azurite and verdigris, or different iron-containing pigments, such as goethite and hematite. A combination of MA-XRF and RIS is therefore recommended. This also ensures proper interpretation of the MA-XRF scans when both iron- and lead-containing pigments are present as a result of the iron XRF signal being suppressed by the strongly absorbing lead signal.
- 5 Bruyn et al. 1989 (note 3), p. 227.
- 6 The MA-XRF scans were carried out using a Bruker M6 Jetstream: rhodium source, 50 kV, 200 μ A, 500 μ m step size, 80 ms/pixel dwell time, 4 scans/painting. The spectra acquired were exported and processed using the PyMCA and Datamuncher software.
- 7 For smalt in *The Night Watch*, see <https://www.rijksmuseum.nl/en/stories/operation-night-watch/story/smalt-research> (consulted 26 September 2022).
- 8 For discoloured smalt in Rembrandt's paintings, see Petria Noble and Annelies van Loon, 'New Insights into Rembrandt's Susanna: Changes of Format, Smalt Discolouration, Identification of Vivianite, Fading of Yellow and Red Lakes, Lead White Paint', *ArtMatters International Journal for Technical Art History* 2 (2005), pp. 76-97; David Bomford, Jo Kirby, Ashok Roy, Axel Rüger and Raymond White, *Art in the Making: Rembrandt*, Yale 2006, pp. 46-47 and 176-77; Petria Noble, Annelies van Loon, Matthias Alfeld, Koen Janssens and Joris Dik, 'Rembrandt and/or Studio, *Saul and David*, c. 1655: Visualising the Curtain Using Cross Section Analyses and x-Ray Fluorescence Imaging', *Technè* 35 (2012), pp. 36-45; Annelies van Loon, Petria Noble, Diana de Man, Matthias Alfeld, Tom Callewaert, Geert Van der Snickt, Koen Janssens and Joris Dik, 'The Role of Smalt in Complex Pigment Mixtures in Rembrandt's *Homer* 1663: Combining MA-XRF Imaging, Microanalysis, Paint Reconstructions and OCT', *Heritage Science* 8, article no. 90 (2020), <https://doi.org/10.1186/s40494-020-00429-5>; Dorothy Mahon, Silvia A. Centeno, Mark T. Wypyski, Geert Van der Snickt, Joris Dik and Koen Janssens, 'Rembrandt's *Aristotle with a Bust of Homer* Revisited: Technical Examination and New Insights', in Marika Spring and Ashok Roy (eds.), *Rembrandt Now: Technical Practice, Conservation and Research*, The National Gallery/Archetype Publications 2022, pp. 55-62, see <https://www.nationalgallery.org.uk/media/5tobre5n/rembrandt-now-online-pdf-170322.pdf> (consulted 14 January 2023).
- 9 Petria Noble, Esther van Duijn, Erma Hermens, Katrien Keune, Annelies van Loon, Susan Smelt, Gwen Tauber and Robert Erdmann, 'An Exceptional Commission: Conservation History, Treatment and Painting Technique of Rembrandt's *Marten and Oopjen*, 1634', *The Rijksmuseum Bulletin* 66 (2018), pp. 308-45, for azurite see pp. 336-37.
- 10 RIS in the visible to near infrared (VNIR) spectral range (400 to 1000 nm) was used to identify the iron-containing earth pigment yellow ochre (goethite). For *The Standard Bearer* the VNIR images were collected by scanning the surface of the painting in a series of line scans in seven rows. These were then stitched and registered to a visible image using software developed by Matthias Alfeld at Delft University of Technology.
- 11 For a detailed discussion of light and shade in Rembrandt's paintings, see Ernst van de Wetering, *A Corpus of Rembrandt Paintings*, vol. v: *The Small-Scale History Paintings*, Dordrecht 2010, pp. 71-80.
- 12 'Meesterlijk schilderij in uitzonderlijke staat,' interview with Petria Noble in Lootsma (ed.) 2022 (note 1), pp. 38-41.
- 13 Thanks to Marie Mundigler who discovered the newspaper clippings in 2022 in the Mauritshuis archives, and Sabrina Meloni and Esther van Duijn for bringing this to our attention.
- 14 For tinted varnishes used by the Dutch restorer Jan Cornelis Traas, see Petria Noble, Sabrina Meloni, Carol Pottasch and Peter van der Ploeg, *Preserving our Heritage: Conservation, Restoration and Technical Research in the Mauritshuis* (Epcó Runia ed.), Zwolle 2009, pp. 27, 29, 140, 141.