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# Overpaints and inpainting on the "Black flag" by Ljubo Babić

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**Abstract:** This paper will present the restoration carried out at the end of 2017 on an oil painting called the "Black flag", by Ljubo Babić, that stands today as one of the five more important paintings in Croatian modern art history. The focus will be on previous interventions – retouches and overpaintings – that were found on such an important painting, as well as the complex process of inpainting.

After a partial removal of the previous interventions, some particles of dirt were still left embedded in the texture. This condition and the artist's paint effects determined the inpainting process. A mimetic inpainting method was chosen, consisting into a two stages process, intermediated with a varnish application: gouache colours to reconstruct the image and pigments mixed with Canada balsam to finish the process. This method resulted in a good reintegration of the retouch and in the overall appearance of the painting.

**Keywords:** overpaint, gouache, Canada balsam, mimetic inpainting, Ljubo Babić, flag

## Repintes y reintegración na "Black Flag" de Ljubo Babić

**Resumen:** Este artículo presentará la restauración llevada a cabo a finales de 2017 sobre un óleo llamado "Black Flag", de Ljubo Babić, que se erige hoy como una de las cinco pinturas más importantes de la historia del arte moderno croata. La atención se centrará en intervenciones anteriores, retoques y repintes, que se encontraron en una pintura tan importante, así como en el complejo proceso de restauración.

Tras una remoción parcial de las intervenciones anteriores, aún quedaron algunas partículas de suciedad incrustadas en la textura. Esta condición y los efectos de pintura del artista determinaron el proceso de pintura. Se eligió un método mimético en pintura, consistente en un proceso de dos etapas, intermediadas con una aplicación de barniz: colores gouache para reconstruir la imagen y pigmentos mezclados con bálsamo de Canadá para finalizar el proceso. Este método resultó muy buena reintegración del retoque y en el aspecto general de la pintura.

**Palabras clave:** repintes, gouache, bálsamo de Canadá, pintura mimética, Ljubo Babić, bandera

## Repintura e reintegração na "Black Flag" de Ljubo Babić

**Resumo:** Este artigo apresentará o restauro realizado no final de 2017 sobre uma pintura a óleo denominada "Black Flag", de Ljubo Babić, que se destaca hoje como uma das cinco pinturas mais importantes da história da arte moderna Croata. A atenção recairá sobre as intervenções anteriores, retoques e repinturas, que foram encontradas nesta importante pintura, bem como o complexo processo de reintegração.

Após a remoção parcial das intervenções anteriores, algumas partículas de sujidade permaneceram incrustadas na textura. Essa condição e os efeitos criados pela pintura do artista determinaram o processo de reintegração. Optou-se por um método de reintegração mimético, que consiste num processo de duas etapas, intermediado por uma aplicação de verniz: cores guache para reconstruir a imagem e pigmentos misturados com bálsamo de Canadá para finalizar o processo. Este método resultou num boa reintegração do retoque e na aparência geral da pintura.

**Palavras-chave:** repintura, guache, bálsamo do Canadá, reintegração mimética, Ljubo Babić, bandeira

### The story behind the “Black flag”

In more than 100 years after it has been painted, the “Black flag” belonged to several private owners, was inadequately treated, but still stands as one of the five important paintings in Croatian modern art history.

#### —Ljubo Babić as an influential figure in art scene

On November 21, 1916, Emperor Francis Joseph died and all the streets of Zagreb were covered with black flags. Ljubo Babić (14 June 1890 – 14 May 1974), then at the age of 26, paints the scene from the second-floor window of his studio in the street of Ilica – the “Black flag” [Figure 1].

As an artist, he worked in a variety of media including oils, tempera, watercolour, drawing, etching, and lithography. A journey to Spain in 1920 resulted in an expressive series

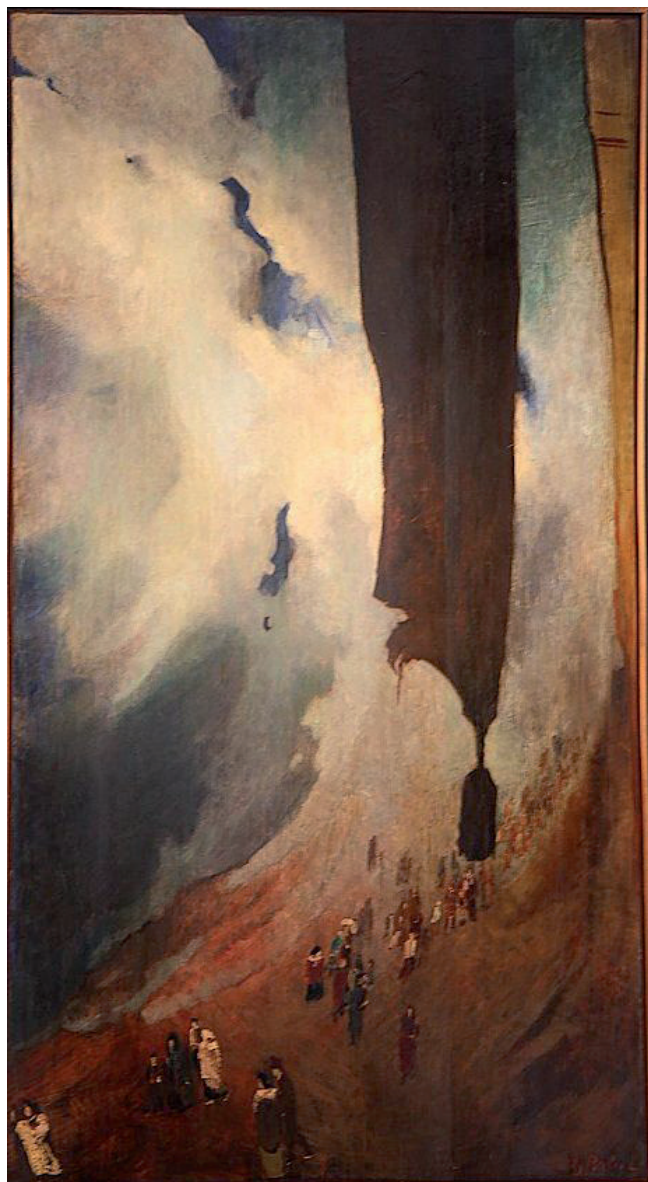


Figure 1.- The “Black Flag” before restoration. ©Sučević Miklin

of aquarelles that stands as a high point of Babić’s own art and Croatian painting in general (Zidić 2009).

Ljubo Babić was not just a painter but one of the most influential figures in the Zagreb art scene between the two World Wars. He was a graphic artist, theatrical set and costume designer, professor and literate, art historian and critic, museum director, and one of the founders of several artistic groups (Uskoković, Krleža 1976: 147, 235, 241).

#### — The motif and meaning of the flags

The motif of a flag appears several times in his paintings and even though they are just paintings of flags, they capture moments when historical events overwhelm everyday life. The “Red flags”, from 1919, was painted in the evening, when a huge mass of people walked down the street carrying red flags. It represents the famous victory of the workers’ socialist party in Zagreb.

The “Black flag” stands as one of his most memorable painting and represents the day when Emperor Francis Joseph died. In the foreground is a long torn black flag, behind it are clouds and below are people walking in the street.

He did not just paint the flags but he also design the national flag with the coat of arms in 1941, as well as the national banknotes. For the Paris Exhibition in 1925, as a set designer, he won the Grand Prix (Zidić 2009).

#### — The ownerships and exhibitions of the “Black flag”

The “Black flag” was first owned by Professor Julije Benešić (1883-1957), director of the Croatian National Theater in Zagreb, after which the painting came into the possession of Natko Katičić (1901-1983), a professor at the Faculty of Law in Zagreb. After that the owner became a famous Croatian painter and academic Josip Vaništa (1924-2018), who was actually a Babić’s student (Jergović 2018).

One year after Babić’s death, in 1975, his retrospective was held and after more than 30 years, in 2010, another exhibition showed as many as 200 works, including the “Black flag”. The “Black flag” was praised by an art historian and theorist Vera Horvat Pintaric. She wrote that it is the best painted flag in Croatian painting, and if compared with flags painted in Europe, before and after that date, it is an original idea.

Josip Vaništa, a long-time owner of the painting, in a 2011 report, said that he was about to sell it. The painting was sold to a solicitor and a passionate art collector, Marko Kallay, who initiated the restoration work on the “Black flag”, so that the painting could be displayed within the exhibition of Kallay collection in 2018 and 2019.

## The research and the conservation-restoration work

The inadequate interventions on the original painted layer affected the state and the overall appearance of the painting. These changes, as well as the restoration work, were documented and substantiated with analyses of the varnish and of the painting stratigraphy.

### —State of conservation

The “Black flag”, as one of the most important paintings in Croatian art history, was famous enough to be put on a Croatian post stamp in 2013, and even though it was highly praised it was not properly handled.

The materials used in the painting were in a good condition. The support is a wooden panel made of glued boards and reinforced with three sliding dovetailed crossbeams with an irregular cross-section on the back (Dardes et al 1998: 125). Seen from the back, the panel is slightly concave but in good condition. Several wooden knots on the front of the painting are lifted due to the movement of the wood and resulted in fine cracks in the ground layer. Such damages are typical and sometimes inevitable with paintings on wooden supports - the fluctuation of relative humidity causes expansion and contraction of the wood that results in warping of the support and affects the upper layers in the form of cracking and flaking.

Fourier-transform Infrared Spectroscopy (FTIR) has shown that the preparatory layer consists of calcium carbonate but the binder could not be precisely identified. The ground was applied with a brush in a thick layer, with an uneven application and not completely sanded to form a smooth and levelled surface.



**Figure 2.**- Yellowed varnish, dirt and retouch layers. Area with removed varnish. ©Sučević Miklin

The “Black flag” as a large format painting (181.2 cm x 99.5 cm) needs to be seen from a distance and because of that, the real state of the paint layer is not at first sight clear. However, when you look close enough, the painting was in a very bad condition: craquelures, yellowing varnish, dirt deposit (dust mixed with grease) and poorly executed retouches, made the whole painting dirty and discoloured [Figure 2].

The restoration research and phases that followed showed that there were more than what meets the eye.

### — Discovering interventions

The work began by discovering inadequate retouches, that were adjusted to the yellowed varnish, dirt and overpaint, that were visible in the daylight. Then continued with photographing under UV light (UVA, 315-400nm) that revealed a yellow-greenish fluorescence of thick varnish typical for aged natural resin. The precise resin could not be detected with FTIR analysis due to prevailing traces of beeswax. Also, interventions in the form of retouch, on and under the varnish layer, were not limited to the missing areas of paint and were not made in the character of the original brushstrokes. Small window probes revealed that the true state of the original paint was aesthetically changed with retouches: yellowed varnish and dirt, visually turned the white-blue colours into brown-green, blue tones into dark green and the lower part of the painting was coated with a thick yellowed varnish visually altering the purple-red colours into brown (Nicolaus 1999: 328, 335).

The stratigraphic analysis of a microsample taken from the white cloud showed one subjacent paint layer and the sample taken from the blue clouds showed three subjacent layers. Between these are layers of varnish. The samples showed inconsistency in the number and types of layers on the different parts of the painting. The sample from the white cloud showed one subsequent paint layer that was the overpaint, and the sample from the blue clouds was taken from a retouched area, showing three paint layers, one being the retouch (that repairs the overpaint) and the other two being the overpaints. Collecting even more microsamples to make additional stratigraphic analysis was not possible due to several reasons: to have a clearer view of how many layers are on each part of the painting, many more samples would have to be taken that would result in damaging the original, and also, because of the thick overpainting and varnish, it would be hard to estimate the perfect location to obtain a representative sample and result.

Small cleaning areas were analysed under the Inova X5 handheld UV lamp (UVL 396-400nm) and using *Dino-lite* Digital microscope (200x magnification). Probes were made with ethanol under UV light which enabled better control of the removal and to better recognize



**Figure 3.-** Overpaint and varnish layers. ©Sučević Miklin

the substance on the cotton swab. Some of the areas in the flag, when seen under UV light, revealed that the original paint layer was coated with several subsequent layers of overpaints and varnishes [Figure 3]. Due to these previous interventions, the flag looked uniform in a black tone, suffocated with overpaints. After the cleaning and the removal of the overpaints, the original dark brown tones with a tinge of dark green became visible.

Using the *Dino-lite*, the overpaints were additionally examined and two types were identified, different in colour, thickness and texture, however their extension it wasn't clear.

#### —The case of the overpaints

During the removal of all the subsequent layers from the original paint, it was found that the whole painting has been overpainted – twice on the flag and blue clouds on the left and once on all the other parts, except where the figures are and the centre of the white clouds. Overpaints followed the original content and were done with dull colours, thickly applied and different in colour and texture. Because of the thickness of the varnish layers, retouches and first overpaint, the second overpaint on the flag and blue clouds was harder to notice even in the UV light. Older retouches will fluorescence strongly and if they lay below several layers of varnish, they are likely to be masked by the fluorescence of the subsequent varnish layers (Stoner and Rushfield 2012: 295).

#### — The removal of the interventions

Several different layers of subsequent interventions determined the removal method using different materials and approaches. Different solutions were used

for the different areas, depending on the thickness and type of subsequent layers but also on the stability of the original paint: a mixture of ethanol and Shellsol T (1:1) was used on the parts that were not overpainted; ethanol with the use of a scalpel on the thick overpaints and a mixture of ethanol, acetone, and isopropanol (1:1:1) to remove hardened overpaint. The removal of the overpaint was done successfully but particles of dirt that were deeply embedded in the texture remained (especially lighter parts) and were cleaned with a 5% solution of triammonium citrate and the scalpel, as much as possible.

Removing the layers of overpaints, varnishes and retouches revealed that the original preparatory and painted layers were missing along the cracks of the wooden support and that apart from that, no major damages were present.

An interesting fact was that some parts of the damaged preparatory layer revealed traces of gold leaf. This opens up the possibility that the panel was previously prepared and intended for something else. At that time, the X-ray analysis was not done due to a short deadline, limited budget and the fact that the painting was going to be exhibited for the next two years.

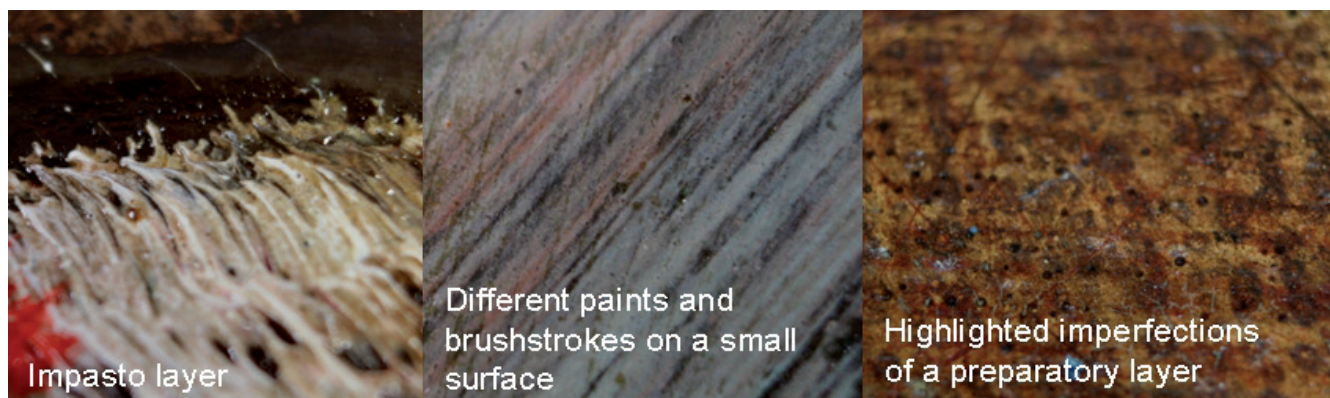
### Materials and method of the inpainting

The reconstruction and reintegration of the polychromy is the most important procedure in the final phase of restoration and depend on the state of the original paint layer but also on the artist's technique.

#### —The original paint layer

The key to every good mimetic inpainting lays in the way the original paint layer was made. The stratigraphic analysis showed thin coloured layers that partially fall into the preparatory layer. With the *Dino-lite* it was possible to see close-up details of the brushstrokes and the application of paint.

Previous interventions made impossible for the palette of expressive colours and Babić's painting style to be seen. On “Black flag” Babić applied thick layers of paint with a coarse brush, with visible strokes creating a textured surface. These *impasto* layers, applied after the underlayer has dried, create a contrast with semi-transparent ones. A lot of different colours and brushstrokes are on a small surface making a very complex intertwined surface similar to the painting the “Clouds” from 1918/19. It is also possible to identify translucent areas, made with diluted paint, over the surface of the preparatory layer, that highlights its imperfections [Figure 4] thus creating artistic effects that can be seen also on the aquarelle painting “Taja Coast” from 1920.



**Figure 4.-** The original paint layer after cleaning – details of the artist technique. ©Sučević Miklin

#### —The method of inpainting

Because of the painting technique, with not completely mixed colours and with traces of brushstrokes in different colours on a small surface, the best way to do the retouching was to make it less noticeable and to blend it in with the original. The method of mimetic inpainting, similar in colour, tone and structure (the filling was done accordingly), ideally matches the surrounding original. In order to perform this kind of retouch, it was necessary to study the original paint application that ranged from transparent to thick.

For the inpainting to blend in completely, it was necessary not only to imitate the original colour, but also the state of conservation, such as the remaining particles of dirt in the texture on some lighter parts. To easily achieve the complexity of the layers the inpainting had to be done in stages.

#### —Steps of the inpainting

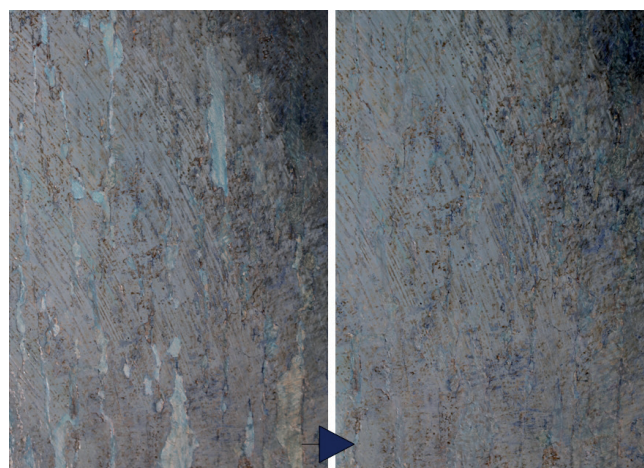
The inpainting was carried out in two stages using two types of media. The first stage was done with gouache colours, and the second with glaze paint – hand mixed pigments and Canada balsam as a binder. This kind of retouching method was presented by the Italian conservator-restorer Stefano Scarpelli. Scarpelli's method involves neutral retouching with gouache, applied in lighter and cooler tones, after which the painting is varnished. The next stage is to finish the retouch with glaze paint made from pigments and Canada balsam. After drying the final varnish is applied (Hirci, Ramovš 2015: 46).

This type of inpainting method can be changed and adjusted so that instead of gouache, aquarelle is used, or instead of hand mixed pigments with Canada balsam, commercial colours with natural mastic resin (*Maimeri Restaura*) or synthetic resins such as Laropal® A 81 (*Gamblin colours*) can be used.

On the "Black Flag" the first stage was done with gouache in order to reconstruct the image, completing some of

the missing areas and leaving others lighter so they could be finished with glaze paint. The new preparatory layer was covered with gouache, applied in coats to maintain transparency and to enhance the texture of the preparatory layer. After the gouache was applied, the painting was varnished with 20% of natural Dammar resin dissolved in White Spirit, using a brush. The second stage was done with glaze paint (pigments with Canada balsam). This kind of paint is applied in layers so that the tones that were made with gouache are adjusted and finished, making sure that the inpainting is not oversaturated. The details like brushstrokes were reconstructed, as well as some dirt particles so that the retouching would integrate better and become less noticeable [Figure 5]. The 20% Dammar varnish was mixed with glaze paint where it was necessary to achieve the same glossy surface, so there was no need for the final varnish to be applied.

This kind of inpainting was also performed earlier in 2016 on another Babić's work – the "Clouds". The "Clouds" is a painting similar to the "Black flag" in terms of support, ground layer and painting, including lots of visible brushstrokes and not completely mixed paint on a small surface. Using the method of mimetic inpainting and two types of media,

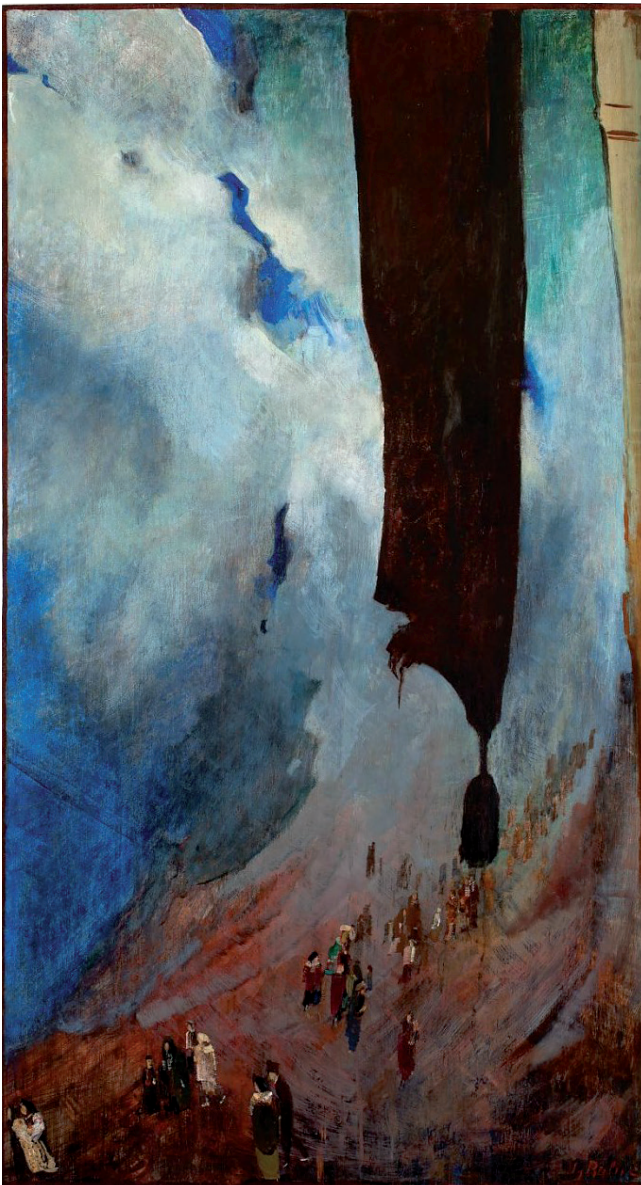


**Figure 5.-** The inpainting process: from gouache to pigments with Canada balsam. ©Sučević Miklin

gouache and pigments mixed with Canada balsam, resulted in good reintegration of the retouch, which was another additional reason why such a method was also used on the “Black flag”.

—*The choice of the varnish*

The inpainting method presented by Stefano Scarpelli includes the first step of the retouching in gouache, then the first application of varnish, the second stage with glaze paint and the final varnish. The first varnish layer applied after the gouache serves to enhance the gouache paint (gouache colours tend to lighten after drying), to protect it from removing and also serve as a barrier for the upper layers that could affect the lustre differently on the original paint and on the retouches in gouache. Then, comes the inpainting with glaze paint and the final varnish, that adjusts the surface lustre of the painting.



**Figure 6.**- The “Black Flag” after restoration. ©Sučević Miklin

In the case of the “Black flag” the painting was varnished only once, after the gouache was applied. It was a high balanced varnish and the lustre of the reconstructed parts corresponded to the lustre of the original. When pigments and Canada balsam were used to finish the inpainting, the same varnish was mixed into the paint to achieve the same glossy surface. This kind of choice was possible, because the areas that had to be retouched were small enough that the varnish mixed in the glaze paint was sufficient to make the surface evenly glossy [Figure 6].

This method was also performed on Babić’s work the “Clouds” where after the gouache, the painting was varnished with a highly balanced Mastic varnish. The inpainting was finished with pigments and Canada balsam, mixed with the Mastic varnish and without applying the final layer of varnish.

The choice of a natural resin, such as Dammar, as a varnish over synthetic materials, that tend to be more stable, particularly in terms of yellowing, can be improved by adding a light stabilizer such as *Tinuvin 292* in the varnish solution. In the case of the “Black flag”, it is known that the painting will be exhibited and then stored in an environment with controlled microclimate conditions, that will enable maintenance of the stability of the natural resin both in the inpainting and in the varnish.

— *Materials used in the inpainting process*

The first stage of inpainting was done using commercial *Winsor and Newton Designers Gouache Colours* that are a combination of pigments and Arabic gum. The colours are a fine quality product, with high levels of pigmentation in the formulation, increased pigment strength and permanence (Winsor and Newton Designers Gouache 2019).

The second stage of inpainting was done with *Schmincke* pigments and Canada balsam from *Kremer pigments* as a binder. The *Schmincke* pigments are of very good quality, finely sieved, with high lightfastness and ideal in combination with the ready-to-use binders (Schmincke pigments 2019). The pigments used were: 103 Titanium white, 237 Lemon yellow, 371 Vermilion red, 373 Carmine, 487 Cerulean blue, 493 Prussian blue, 499 Ultramarine blue deep, 507 Chromium oxide green brilliant, 623 Raw Sienna, 682 Raw umbra greenish, 683 Burnt umber and 723 Ivory black. The Canada balsam is a natural oleoresinous exudation of the balsam fir, that can be used as a plasticizing resin for varnishes and paints, since it does not crystallize with age and its optical properties do not deteriorate (Canada Balsam Kremer pigment 2019). The Canada balsam was used as a pigment binder.

To prepare the paint with Canada balsam first the pigments have to be grinded on a polished glass with a bat and mixed with ethanol or *Shellsol T* to produce a smooth paste. This process lasts several hours, until the pigment is finely grounded. The size of the grain can be checked by painting

a few strokes on a glass surface with a brush. After the solvent evaporates the pigment is collected and well mixed with Canada balsam on a glass surface using a spatula. An approximate ratio of 1/3 pigment and 2/3 binder is used but it can vary depending on the absorbency of the pigments. The paint is then placed on a palette. When dried, it can be dissolved with acetone, ethanol or *Shellsol A*, among other solvents.

## Conclusion

The decision of removing previous interventions at the initial phase of restoration, determined the subsequent treatments such as the filling, inpainting, and varnishing. This decision affected the overall appearance of the painting and the decision-making process when choosing methods and materials. To recreate missing parts of the painted layer and thus reinterpret the original painted form, research on the artist's brushstroke and materials had to be made. Having in mind the future function of the artwork, it was taken into account factors as reversibility, stability or even the necessity of creating a stable environment.

The methods and techniques of inpainting, when complemented with theory, can be carefully modified and adapted to a painting's specific state, thus creating new approaches and possibilities.

Babić's painting the "Black flag" was not lost in the vortex of centuries and generations. Today it stands as one of the five important paintings in the Croatian modern art history. In the end, it does not matter who made the inadequate interventions or what is today's value of the painting. Due to the selfless contribution in maintaining the painting's presence for the future generations by the new owner, the restoration work was carried out in accordance with the profession, selecting suitable methods and allowing the possibility for further research.

## Acknowledgement

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## References

Canada Balsam Kremer pigmente. <https://shop.kremerpigments.com/en/mediums-binders-und-glues/solvent-soluble-binders/balsams-und-wax/5704/canada-balsam>. [Consult 15/10/2019]

DARDES, K., ROTHE, A. (1998). "The Structural Conservation of Panel Paintings". In *Proceedings of a Symposium at the J. Paul Getty Museum*, 24-28 April 1995, Los Angeles, Getty Conservation Institute.

GOSAR HIRCI, B., MOČNIK RAMOVŠ, L. (2015). "Use of retouching

colours based on resin binders – from theory into practice". In *3rd International Meeting on Retouching of Cultural Heritage*, Postprints of the 3rd Meeting. [Consult. 15/12/2019]

HILL STONER, J., RUSHFIELD, R. (2012). *Conservation of Easel Paintings*. London, New York, Routledge.

HORVAT PINTARIĆ, V. (2009). *Tradicija i moderna*. Zagreb, Hrvatska akademija znanosti i umjetnosti.

JERGOVIĆ, M. (2018). *Crna zastava, Vaništa*, <https://www.jergovic.com/ajfelov-most/crna-zastava-vanista/>

NICOLAUS, K. (1999). *The Restoration of Paintings*. Cologne, Konemann Ltd.

Schmincke pigments. <https://www.schmincke.de/en/products/pigments-and-bronzes/pigments.html>. [Consult. 1/11/2019]

USKOKOVIĆ, J., KRLEŽA, M. (1976). *Ljubo Babić: Retrospektiva 1905-1969*. Zagreb, Moderna galerija.

Winsor and Newton Designers gouache. <http://www.winsornewton.com/na/shop/water-colour/designers-gouache> [Consult. 28/09/2019]

ZIDIĆ, I. (2009). *Ljubo Babić*, <http://www.matica.hr/kolo/314/Ljubo%20Babi%C4%87/> [Consult. 01/09/2019].

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