

Glass-painting in Glasriket

Susann Johannisson

Kalmar läns museum
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Text	Susann Johannisson, Kalmar läns museum The work has been based at Kalmar läns museum, in cooperation with Kulturparken Småland/Smålands museum.
Translation	Charly Hultén, In Other Words (American English)
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Introduction

The very special cultural heritage that has developed around glass production over the centuries in what has come to be known as 'Glasriket' [the Kingdom of Crystal] is a major focus of modern-day cultural institutions in the region and all of Sweden. The glass industry has undergone major changes in recent decades. Numerous glassworks have gone out of business; large-scale industrial production has given way to art glass production and environmentally motivated re-processing glassworks that produce short series and unique pieces. One effect of this transformation is that many traditional production techniques have nearly disappeared — some entirely, and with them, the human expertise and skills they required.

For some years now, the local County administration has supported projects that document these 'endangered' skills and their historical contexts. The present work is the most recent work in a series; earlier titles have described crucible production, production of wooden moulds, pressed glass, and cut and engraved glass. Each, it is hoped, will deepen our understanding and appreciation of the historical processes and cultural traditions that have formed the phenomenon we know as *Glasriket*.

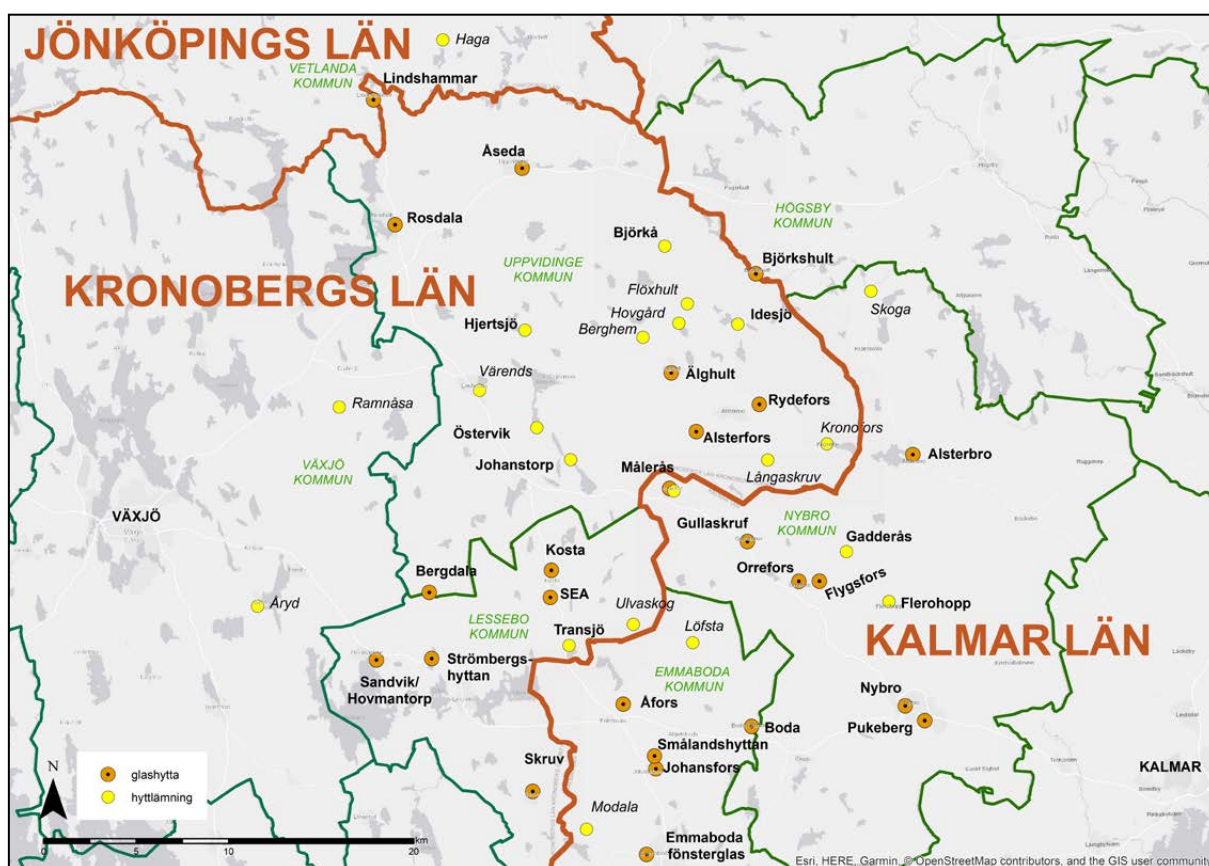
Besides describing the various technical aspects of glass-painting, we shall focus especially on the changes in materials, equipment and design that the craft underwent over the course of the twentieth century. We also try to gauge the importance glass-painting has had for Glasriket and for public appreciation of painted glass.

We are deeply indebted to a number of people in the industry who have informed our work: glass-painters at Kosta glassworks, retired glass-painters, and others familiar with the industry. We have also gained many insights from previously published work. The project was made possible by a grant from the County Administration of Kalmar County. It has been carried out by Kalmar Länsmuseum with input from Kulturparken Småland/Sveriges glasmuseum.

The few people who still paint glass at Kosta glassworks have extensive knowledge and long experience. They have experienced the fundamental changes in both materials and technologies resulting from modern regulations pertaining to worker safety and the environment. They have expertise in paints, pigments and techniques, from preparing paint to applying it to glass. Several have elder family members whose experience of the occupation stretches decades back in time. Many in this elder generation have helped us to decipher the signatures — initials — on older pieces. (A list of names and signatures is presented in Annex 1.) Contemporary glass-painters, predominantly women, form a corps that, as far as we can determine, has never before been documented.

Definitions and limits

Except for the introductory historical overview, the focus of this work is geographically confined to the area known as 'Glasriket'. Kosta glassworks is a prime focal point; our documentation of the modern-day production process took place there. Åfors glassworks also receives some extra attention, thanks to its association with glass design-



⁷ 'Glasriket' (the Realm of Glass) refers to an area that extends across the forested parts of Kalmar and Kronoberg counties.

er Ulrica Hydman-Vallien and the tremendous influence her work has had on glass-painting for Glasriket as a whole.

The term, 'Glasriket' was coined in the tourist industry in the 1970s. It refers to the forested portions of two counties in south-central Sweden: Kalmar and Kronoberg, both of which were once freckled with glassworks. Never an official, administrative term, the name has become well-established and is widely used.

As used here, 'painted glass' refers to hand-painted glass using methods of applying paint and pigment to glass with a brush or other implement.

The word 'glass' refers to art glass and service glass, but not window glass. Painted glass can be hand-blown or pressed glass – both are referred to as 'hollowware' – as opposed to flat window glass.

Practically all the glassworks in Glasriket produced some painted glass. Unfortunately, the history of glass-painting is, relatively speaking, poorly documented. There are many gaps regarding early glass-painting studios and the techniques used. There is a clear need for further research in this area.

History

Early glass-painting in Europe

The history of decorative glass-painting stretches back thousands of years. Glass was painted in Antiquity using earth pigments, enamel and gold. Glass painted with gold has been found throughout the former Roman Empire, which extended well into the fifth century. Glass was painted in Syria and Mesopotamia, starting in the 1200s. Artisans started painting glass in Venice toward the end of that century. Several glass beakers bearing enamel crests of noble families from this period, known as Aldrevandin beakers, have been preserved. By the mid-1400s Venice had become an international center for glass-painting.

As the blown glass industry in Venice developed and expanded, painted glass declined. Venetian painted glass had nearly disappeared by the end of the 1500s. One reason for this development may have been the expansion of hand-painted glass production to the German states, whereupon German demand for painted glass from Venice gradually died off. Bohemia flourished as the new center for enamel glass-painting in the 1600s.

As the popularity of cut and etched glass grew in the 1700s, the more rustic painted glass went out of fashion. In this period we find examples of combined techniques, where cut crystal was also painted, mainly with gold and silver.

Painting with enamel experienced a renaissance in Bohemia in the early 1800s. At this time, meticulously painted motifs imitating painted porcelain of the time – often pastoral or urban landscapes –

came into vogue. The genre is called ‘Mohn glass’ after its originators, Samuel and Gottlob Mohn.

Early glass-painting in Sweden

Knowledge of painted glass most likely came to Sweden in the Middle Ages with European clerics, who built churches and cathedrals. A second wave of imported knowledge of glass-painting started in the mid-1550s with the establishment of the first glassworks in Stockholm. Painted glass of even earlier date has been found in Sweden in archaeological digs, but these items were imports from abroad. That painted glass is found in archaeological contexts bears witness to the value attached to such objects at the time. The fragments tell us little about working conditions and the kilns of the times, but the paint traces are a source of knowledge.

Among the earliest Swedish glassworks – albeit outside Glasriket – are Germundslycke/Bökenberg (1623–1641) in Södra Möre [coastal southern Småland], Trestenshult (1628–1631) and Midingsbråte (1631–1634) in southernmost Småland, and Casimirsborg (1757–1811) in Tjust [coastal northern Småland]. Whether these glassworks employed painters is unknown. There are, for example, seltzer glasses of the period with gold-painted rims, including some from Casimirsborg, so at least some painting did take place there.

The following examples from several glassworks in Glasriket trace the development of painted glass in this area from the 1700s to the present.

Glass-painting in Glasriket before 1900

Kosta

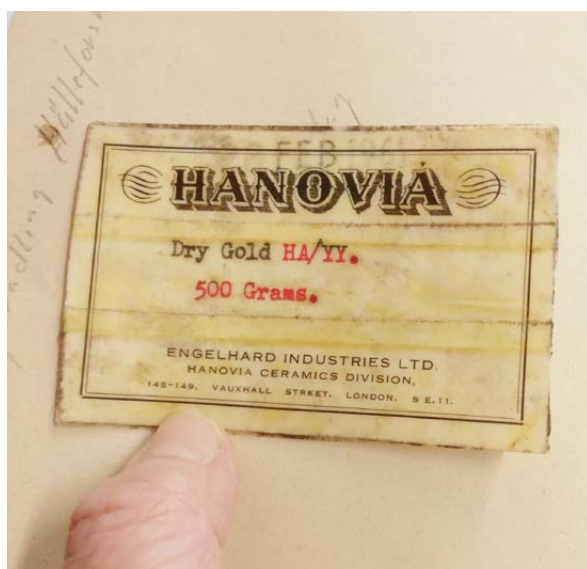
Glass-painting skills came to Kosta glassworks in the 1740s with immigrant glass artisans from Germany and Bohemia. Records from 1744, only two years after the glassworks was founded, show that “6 books of true gold” (gold leaf) were delivered to Kosta. Whether the gold was intended for glass-painting is not certain, but it is highly likely.

The first glass-painter at Kosta whose name is known was Jöran Schmidt. He painted in the 1750s.

The next mention of glass-painting in documents relating to Kosta is dated 1834. An ‘experiment’ with glass-painting was undertaken. How it turned out was not recorded. The next mention in the archives is from 1856, when ‘Draftsman Lars Kjellander’ worked with gilding glass. From 1865 to 1870, he decorated an ivory-hued glass series produced at Kosta. Kjellander was succeeded by ‘Draftsman Ahrens’.



This glass from Casimirsborg glassworks offers an excellent example of 18th-century combined techniques, here engraved surfaces and gold-painted rim and stars. Photo: Maria Winsö/Kalmar läns museum.



Labels from containers of gold paint imported from England and The Netherlands. From Cecilia Almqvist's private studio.





Odelberg, from Kosta, is an example of gold-painted glass of the 19th century. Photo: Björn Arfvidsson, Kulturparken Småland/Smålands Museum.



Glass garden orbs with silver-painted surface in the Krusenstierna Gardens in Kalmar. Photo: Kalmar läns museum.

In this era painted items were fired in the glassworks' cooling ovens. The first kiln at Kosta dedicated to firing painted glass, a so-called 'muffle kiln', was constructed in 1884. The kiln was in use in 1886, as an entry in the accounts notes the purchase of 75 kg (165 lbs) of red enamel, a popular color for glass-painting at the time. Starting in 1890, Kosta produced wine glasses with rims of gold. Glass-painter Anton Raab is said to have experimented with burnish gold. Raab also stamped patterns onto glass in the 1880s. These pieces proved very popular.

In the run-up to the Stockholm Exhibition of 1897, Kosta undertook several projects featuring painted glass. Painters on the payroll these years were a Frenchman, Langlassé; a German, Gube; and a Swede, Söderbom. In the 1890s Kosta produced a good number of silver-plated 'garden orbs' that were fired in the kiln at Kosta. The orbs were popular garden decorations among the upper classes of the time.

In the 1890s, gold was used to decorate two service series, *Odelberg* and *Prins Carl*. The former is inspired by an eighteenth-century style (see image from Casimirsborg). Starting in 1905, glass-painters Karl and Allan Lindeberg, father and son, used even more gold on their products.

Up to the end of the nineteenth century Swedish glassworks were few. Painted glass that included gold decor was a luxury only wealthier households could afford. Swedish production was limited, and imported items continued to predominate. But, toward the end of the century decorated glass became more and more widely available, mainly through applying gold to the rims of items of pressed glass. Pressed glass could be produced in much longer series and therefore cost much less than cut crystal.

Johansfors glassworks

A glass-painting studio was established at Johansfors in 1889. It was housed in a former dairy alongside a waterfall in Lyckebyån. The factory



Johansfors started as a glass painting studio in 1889. It was housed in a former dairy on the banks of the stream. The glassworks was built only two years later, in 1891.

initially purchased crude glass from a number of glassworks. To get its painting studio started, Johansfors hired a large contingent of glass-painters from Bohemia. The brothers Zenkert, Grünwald, Diessner, Wollman, Pugner, Richter and others made up 'the Bohemian studio'. As many as fifteen painters were working in the studio at the same time. A second studio was made up of Swedish painters. These included John Franzén, Ludvig Gustavsson, Enok Karlsson, Karl-Oskar Karlsson, Yngve Eckerström, Algot Gård and Axel Meuller, who was of German descent. Two years later, a glassworks was built.

Glass-painting in Glasriket, 1900–1950

In the early years of the twentieth century the Bohemian painters' style differed markedly from their Swedish colleagues'. Bohemian painters traditionally painted 'heavily' with thick paint,

whereas the Swedish tradition was to use less paint – often diluted, transparent enamel. "*You see the difference clearly when you compare different pieces today*", says glass connoisseur Peter Lejon. Susann Diesner, whose paternal grandfather, Karl, painted at Åfors glassworks, relates that he painted numerous patterns in the early 1900s that came to be known as 'high enamel glass'. The paint was applied in such thick layers that it looked as though flowers were growing on the glass surface. To achieve this effect, the pattern had to be painted and fired several times.

Glass with gold decor continued to be popular through the first decades of the century, as was enamelled glass. More glassworks in the region sought out and hired Bohemian painters. The number of glassworks, particularly in Glasriket, increased, as well.

The Great Depression of the 1930s affected the glass industry, too. Many glass-painters lost their jobs in the decade following the crash. It was also difficult to procure raw materials of good quality, which naturally affected the quality of the finished product. The glass could be off-color or otherwise flawed. Peter Lejon relates that many glassworks had to be very budget-conscious; re-use of discarded glass became a common practice: *“When a finished piece turned out to have bubbles or impurities, it was sent to the painting studio where the flaws were painted over. That way, the piece could be sold as ‘flawless’.”*

The advent of Functionalism in the 1930s led to a decline in the popularity of painted glass. In retrospect, we see that interest in painted glass peaked in the 1940s. Then, it subsided for a time.

Orrefors

The first glassworks at Orrefors was established in 1898 alongside the stream, Vapenbäcksån. Orrefors soon became renowned for its art glassware. Painted glass plays a relatively little part in Orrefors' reputation, but glass-painters have been employed there since early days. Heinrich Wollman, signature 'H W', worked there between 1914 and 1923. He was succeeded by Albin Weikert. For the Stockholm Exhibition of 1930, glass designer Vicke Lindstrand produced seventeen different prototypes that had painted decor, some of which involved paint applied to frosted surfaces. Another model involved enamel applied to a lustreless caustic-etched surface. The designs used green, red and black enamel; some had accents in gold. The motifs were narrative or made reference to mythology. Many of the figures were women. These pieces formed a stark contrast to the elegantly understated engraved and cut glass that Orrefors was otherwise known for. Lindstrand's painted work for the Exhibition was not a commercial success; only later did the works attract attention.



This green vase, presented by the newly opened Hovmantorp glassworks, paraphrases Wilhelm Kåge's very popular ceramic series, *Argenta*, produced by the Gustafsberg porcelain factory and introduced at the Stockholm Exhibition of 1930. The vase pictured, however, probably dates from the 1940s. It may be that the vase was painted to mask an unevenness or other blemish on the surface before the gold-painted motif was added. From Håkan Henriksson's private collection. Photo: Håkan Henriksson.



A vase designed by Vicke Lindstrand and painted at Orrefors for the Stockholm Exhibition of 1930. The hand-painted motif is typical of its time. Photo: Jörgen Ludwigsson, Kulturparken Småland/Smålands Museum.



The Johansfors glass painting studio from 1920. The kilns in the studio, inside the walls, are still intact, as is the chimney. The kilns' doors, however, have been removed.

Johansfors

In the 1910s Johansfors employed fifteen glass-painters, all of whom were men. In 1920 the glass studio burned to the ground. An entirely new studio was built to replace it, with the consequence that Johansfors now had a totally modern studio. The building, a red-painted timbered structure, still stands. The kilns are built into the walls.

Åfors glasbruk

The Åfors glassworks was established alongside the stream, Lyckebyån in 1876. Åfors produced both flared and cut glass. As painted glass was becoming increasingly popular, Åfors' owner de-

cided to open a painting studio. It is very likely that he was inspired by the success of the studio at nearby Johansfors.

An entirely new glass-painting studio started production in 1924, under the leadership of Karl Zenkert. The timing had to do with the creation of a new dam and power station at the waterfall in Åfors. With the coming of electricity, a new cutting/grinding studio had been built alongside the glassworks – a clear improvement in productivity in that they no longer needed to transport glass between the glassworks and the grinding studio down by the stream. Grinding lathe could now be



A hand-painted bottle from the Johansfors glass painting studio from the early 1900's. Floral motifs like this one were introduced to Glasriket by immigrant glass painters from Bohemia.



A pressed-glass bowl that has been painted. Johansfors glassworks, 1940s. Photo: Björn Arfvidsson, Kulturparken Småland/Smålands Museum.



The old glass painting studio in Åfors was located alongside the stream, as the building was originally a hydro-powered glass-cutting shop. The structure was torn down around 1980. The photo, from the 1920s, shows the clay mill (*degelkross*) to the far left.

electrically powered instead of relying on direct hydropower from the old waterwheel. The old grinding studio, now vacant, stood ready to house the new painting studio.

Karl Zenkert, who had acquired his glass-painting skills in his native Bohemia, had great freedom; he painted what he chose to paint. Åfors at this time had no designated 'designer'. Zenkert's works were referred to as 'his patterns'. He sometimes signed them, 'K Z'. Other leading painters at Åfors of this time were Karl Diesner, Emil Veikert, Albin Veikert and Herman Johansson. These latter are not known to have signed their

work, but each had personal traits. Albin Veikert painted black outlines and then filled the fields with color; Johansson specialized in stylized hearts and ski-caps of the kind Swedish elves are depicted as wearing.

Glass-painting at Åfors experienced zeniths in the 1920s and again in the 1940s. After that, popular interest in painted glass gradually declined. In 1957, the old studio shut its doors. Some painting most likely continued, now in space that had been a 'flower-cutting' studio. Herman Johansson continued to paint at Åfors into the 1960s. His specialty was silk-screen printing on glass.



Hand-painted glass from Åfors glassworks with a motif typical of the 1930s against a black fond. Photo: Jörgen Ludwigsson, Kulturparken Småland/Smålands Museum.

Karl Zenkert, one of many glass-painters from Bohemia

Karl Zenkert was one of a group of about fifteen glass-painters who were recruited to Johansford glassworks from Bohemia. This was around 1889; he would have been about 26. He was born in Ober-Arnsdorf, Bohemia, in 1873 and was already a trained glass-painter when he emigrated. He worked at Johansfors together with two brothers, Adolf and Reinhold. Five children were born to Karl and his wife Berta while at Johansfors. After some years, the family moved south and settled in Rumania, then in Czechoslovakia.

The foreman at Åfors glassworks had become acquainted with Zenkert in Johansfors. When the manager of Åfors decided to create an in-house painting studio, he sent a letter to Zenkert – and the family moved back to Sweden. It is said in the family that Berta preferred life in Sweden. Karl and Berta, née Jäger, became naturalized citizens on 15 May 1936. Sadly, Karl Zenkert died in December that same year, at the age of 63. Zenkert had painted glass shown in Paris in 1937.



Hand-painted glass from Åfors, probably from the 1920s. Cranes were a signature motif for the Åfors glassworks. From Karl-Gustav Zenkert's private archives.



A hand-painted pressed-glass sugarbowl from Åfors, 1940s. Photo: Hans Runesson.



Glass-painters at New Hofmantorp Glassworks, mid-1920s. The man with a mustache, second to the left, is Frans Müller. The man in the center is Edgar Fagerlund. Photo from Håkan Henrikssons private collection.

Boda

Exactly when glass-painting started at Boda glassworks is not known, but in 1923 one of the Bohemian immigrants, Ludwig Richter, started work there. Richter had come to Sweden in 1904 and started his Swedish career at Hofmantorp. Glass-painting at Boda was doing well in the 1920s. An additional painter, Emil Weickert, – he, too from Bohemia – was hired. (Weickert would later move on to Åfors glassworks.) When more painters were needed, Bror Kronborg was recruited from the hot-shop to join the studio¹. In the late 1930s, the economy was still suffering the effects of the Great Depression, which also impacted on the glass industry and glass-painting. When Richter departed Boda for Orrefors in 1941, glass-painting at Boda ceased.

Hofmantorp

The New Hofmantorp Glassworks was early to produce spray-painted glass.

This was Frans Müller's specialty, and he may well have developed the technique. *"The method he used was 'top secret', so secret that he worked behind locked doors so that no one could spy on him"*. says glass connoisseur Håkan Henriksson, from Hofmantorp. Because of the anxiety about secrecy, there is no record of the technical details.

¹ Bror Kronborg emigrated in 1928 to the U.S., where he specialized in stained glass in churches.



A vase from New Hofmantorp Glassworks, painted with their spray-painting technology in the 1920s. Photo: Björn Arfvidsson, Kulturparken Småland/Smålands Museum.



Painted vase on blue fond, painted by Oskar Nelson in 1890. From Håkan Henrikssons private collection. Photo: Håkan Henriksson.

Rosdala, Pukeberg and Gullaskruf

Both Rosdala and Pukeberg specialized in lamp glass and petrol pump globes. Many lamps had painted decor, from which we may conclude that both glassworks had glass-painting studios.

Rosdala was among the first to use a spray-painting technique, but documentation of that technique is

lacking. The building that housed the studio at Rosdala, from 1930, is still standing. The kilns used to fire painted glass at both glassworks are still intact.

At Pukeberg, Lennart and Helena Nyblom – a father-and-daughter team – painted glass. Lennart signed his work 'N Y B'.



Bottle painted by Lennart Nyblom for Pukeberg glassworks in 1926.
Photo: Kulturparken Småland.

AKTIEBOLAGET ROSDALA GLASBRUK, NORRHULT



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628 S. 239



629 S. 242



574 S. 235



575 S. 231



8 S. 245



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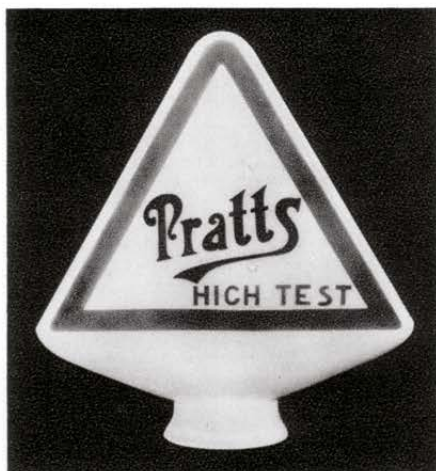


621 S. 246



581 S. 244

Painted lamp glasses from Rosdala glassworks. Painting played an important part in the glassworks' production.



Bensinglober, opalöverfång med inbränd text.

Even text and logotypes on petrol pump globes were hand-painted in the studio at Pukeberg glassworks.

Gullaskruf glassworks had its own glass-painting studio with several painters on salary. When William Stenberg assumed ownership of the factory in 1927, he contacted Hugo Gelin, an established artist, and asked him to develop some novel ideas for the Stockholm Exhibition of 1930. Stenberg, signature 'W S', designed much of the collection himself. Hugo Gelin contributed, as well. Among other things, he painted figures in red and white enamel on glass of deep indigo blue. Gelin continued to work at Gullaskruf until his death in 1953. His hallmarks are thick, but fluid lines and his use of appliqués and stamps. Gelin's work is marked with the triangular Gullaskruf logo, and a squared 'G H' above it.

Small, independent glassworks, 1900–1950

In addition to the glass-painting studios at most glassworks in Glasriket, there were also privately owned studios in the region. For example, Smålands Alster [Products of Småland] in Kosta, owned by Allan Lindeberg; Svenska blomster-vasfabriken [The Swedish Flower-Vase Factory], owned by Oskar Nelson, and a glass-painting studio in Hofmantorp, owned by Josef Kraus.

Edgar Fagerlund, signature 'E F', painted glass at the New Hofmantorp Glassworks, starting in the 1910s. In the 1920s he opened a private glass-painting studio in his home. He later shut the studio down and moved on, first to manage the glass-painting studio at Åfors, and then the studio at Flygsfors glassworks.



A glass from Gullaskruf, hand-painted by Hugo Gelin, probably in the 1930s. Gelin was noted for his gracefully fluid style. From the Andersson family's private collection.



Hugo Gelin painted this glass, where white enamel forms a stark contrast to the indigo blue glass. From the Andersson family's private collection. Photo: Boel Andersson.



Twin vases painted at "The Swedish Flower-Vase Factory". From Håkan Henrikssons private collection. Photo: Håkan Henriksson.

The Swedish Flower-Vase Factory in Hovmantorp

Text: Håkan Henriksson

The Swedish Flower-Vase Factory in Hovmantorp was in operation between 1895 and 1915. The factory was founded by Oscar Nelson and Carl Söderström. Nelson (then Nilsson) had been employed at Sandviks glassworks since its start in 1889 and had painted glass there for a number of years. The new factory was located alongside the stream, Fibbleån, between Lake Rottne and the train station in Hovmantorp. It produced sets of twin vases in opal white, which graced nearly every Swedish household around the turn of the century. The factory purchased its glass from various glassworks in the area, Sandvik and New Hofmantorps Glassworks among them. The glass-painting studio at Sandvik was apparently disbanded when Nelson left to start his own business. Oscar Nelson also started Åryds glassworks in 1912 together with a partner, who was the principal supplier of glass to the glass-pain-

ting studio. His search for painters brought Oscar to Haida in Bohemia (now Nový Bor in Czech Republic). The trip resulted in eight recruits, who moved to Sweden. At one time, Åryd had twelve glass-painters from Bohemia. The company employed 27 painters. One of them, Josef Kraus, started his own glass-painting studio in Hovmantorp in the early 1900s. Another was Frans Müller, who later became foreman in the glass-painting studio at New Hofmantorps Glassworks. He was known as a skilled craftsman and had considerable influence over what the glassworks chose to produce. The Swedish Flower-Vase Factory was forced to shut its doors in 1915, as the world war had forced many of its painters to leave for Bohemia to fight for their homeland. Kraus and Müller, however, had already become Swedish citizens and could stay.



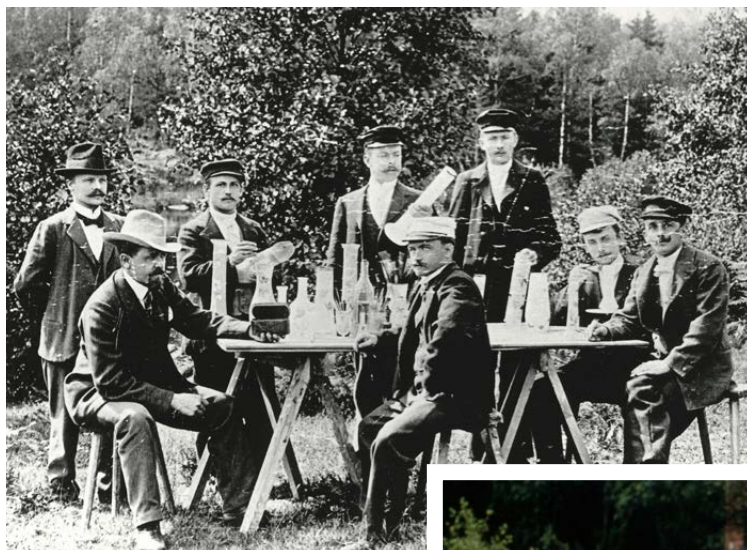
Painted bottle from the 1930s. Edgar Fagerlund signed his work 'EF'. From Håkan Henrikssons private collection. Photo: Håkan Henriksson.



A lamp glass painted in the privately owned glass painting studio, Smålands Alster [Products of Småland] in Kosta, starting in the late 1940s. Photo: Jörgen Ludwigsson, Kulturparken Småland/ Smålands Museum.

Smålands Alster

Lars Gösta Magnusson, born in 1934, recalls how he, at about age 13, visited Smålands Alster [Products of Småland], a newly opened private glass-painting studio in Kosta. The company was started by Allan Lindeberg. Allan let Lars Gösta and his two friends try painting a gold stripe on a glass. Lars Gösta was the only one of them who managed to do it, and Lindeberg offered him a job — for 0.75 crowns an hour. This was toward the end of the 1940s. Lars Göran worked for Lindeberg for 17 years and learned a great deal from him. Then, Kosta glassworks made him an offer, which he accepted. He started in Kosta's glass-cutting department, but soon transferred to the painting studio, under Erik Kjellander.



Some of the male glass painters from Bohemia, Johansfors glassworks, around 1900. Photo from Karl Zenkert's private archives.



Some of the female glass painters at Åfors glassworks, around 1995. Photo: Hans Runesson.

Men's work becomes women's work

As we have seen at, for example, Johansfors around the turn of the nineteenth century, glass-painters were men. Swedish glassworks made considerable efforts to recruit painters from Bohemia and Germany. The recruits enjoyed high status, as evidenced in an old photo (above). Their attire and the expressions on their faces – all exude a professional pride. Their recruitment to a distant country itself could be taken as a validation of their worth.

Starting in the 1920s, several of these men's daughters began painting glass. They, too, carried

on Bohemian tradition. For the next few decades men and women painted glass in the studios, side by side. The 1970s, however, saw a marked increase in the number of women painters. Part of the attraction was that glass-painting took place close to their homes. The work was also less taxing than other work in the factories. Also, a revival in the popularity of painted glass meant more job opportunities; women came to dominate the occupation.

Annex 1 offers a list of glass-painters in the region.



These striped seltzer glasses, painted in the 1950s at Johansfors glassworks, were a stark break with tradition. Designed by the glassworks' Art Director, Bengt Orup, they were surely considered very modern. Photo: Jörgen Ludwigsson, Kulturparken Småland/Smålands Museum.

Glass-painting in Glasriket in the latter half of the 1900s

After the second world war tastes changed. Older styles of painting were no longer popular. Glass-painting lived on, but on a smaller scale. The era was characterized by more disciplined patterns, designed by professional designers. Developments at Johansfors provide a good illustration. In the 1950s the glassworks produced several popular series in the new style. On the whole, however, the 1950s and 1960s saw a decline in demand for painted glass – especially the now 'old-fashioned' floral motifs and gold decor. Artisanal glass also faced sharper competition from totally automated glass production. At the same time, households experienced a higher standard of living and stronger purchasing power. More people could afford to buy crystal. Design, too, became more popular. Starting in the 1980s, freer, 'wilder' patterns of decor got a major boost through the work of Ulrica Hydman-Vallien.

Johansfors

Johansfors glassworks was one of the first glass producers to venture into painted glass of an entirely new style. Bengt Orup assumed the position of Artistic Director at Johansfors in 1952. Orup designed household service glass, indeed, hundreds of sets, bowls, vases and decanters. Many of his classics had painted decor, among them the series *Strikt*, *Party* and *Stripe*. The H55 exhibition in Helsingborg in 1955 marked the breakthrough for the new stripes. The clear, unadorned pattern formed a stark contrast to earlier styles. Johansfors glassworks developed a special method of making striped glass (see image, page 62). There were still three or four glass-painters at Johansfors at the time. But this style, too, would soon become passé. What is more, competition from machine-produced glass was making inroads in the market on a broad front. In 1974, glass-painting at Johansfors ceased once and for all. The last glass-painter left in the studio, Sixten Arnström, transferred to the painting studio at Kosta.



An example of glass painted with asphalt before the glass was blown. The bowl is from the Orrefors studio. The procedure, a form of *graal technique*, was long a tightly kept secret. From Christina Lund's private collection.

Orrefors

Heinrich ('Heintz') Richter worked in the glass-painting studio at Orrefors between 1955 and 1990. He signed his work, 'H R'. Heintz has said that he introduced painting with transparent enamel to Orrefors. He had used such paint when he worked at Eda glassworks.

Christina Lund began working with art glass at Orrefors in 1974. She assisted the designers and worked with a variety of decor techniques: painting, engraving and sandblasting. The painting studio was located in a small room adjoining the engraving studio. Lund helped the designers develop samples and new techniques. Some techniques were closely held secrets. For that reason, the small room was closed to both public view and visitors. This secrecy may also explain the

lack of detailed documentation of glass-painting or methods developed and used at Orrefors.

One such closely held secret, never revealed, was that the *graal* vases' post² were painted with asphalt. The technique was used as early as the 1930s. It involved applying acid to the glass manually. Lund performed this task, without any protective equipment, from age 17 and on. When this use of acid was forbidden, Orrefors quit painting with asphalt. Since only a select few knew of the technique, it was nearly forgotten.

At the end of the 1960s, painters Lund and Richter developed an entirely new technique for a new series designed by Gunnar Cyrén. This demonstrates the independence glass-painters enjoyed, and their importance in glass production – for

2 Graal is produced by encasing a patterned post (a somewhat inflated core of molten glass) in a thick layer of glass of another color and then inflating both layers.

which, however, they were seldom given credit. The series, *Svenska män och flickor* is an example of the technique.

Lund also painted the posts for Ulrica Hydman-Vallien's graal vases in Orrefors for many years. Ingegerd Råman is another designer whose products were painted in Orrefors, starting in 1999. One of Råman's series, *Caracalla*, features white patterns painted on black glass. In collaboration with Råman, Lund helped develop several of the methods used to produce the series. Lund alone painted the series. She describes the technique: "I painted a straight line and then drew out the paint with my fingers to create a shadow effect." Glass-painting at Orrefors continued until 2013, when the glassworks closed.

Orrefors in Strömbergshyttan and Sandvik

Sandviks glassworks started in 1889 in the village of Hovmantorp alongside a stream that empties into Lake Rottne. The factory was purchased by Orrefors in 1918. Thereafter, products bearing Orrefors' trademark were produced there. Glass was painted at Sandvik a few years around the turn of the nineteenth century.

In 1977, Eva Englund designed a new series for Orrefors glassworks called *Maja*. It featured a decor consisting of delicately painted flowers. The series was very popular, and in order to satisfy demand Orrefors contracted with Lindblom's glass-painting studio in Strömbergshyttan to paint it. During a period in the 1980s, the studio employed 15 to 20 painters. Nils Stureson, a private glass-painter, also painted Englund's *Maja* for a time. His glass is signed 'E E / N S'.

In the early 1990s, Orrefors acquired Lindblom's studio. In 1991, the series *Nobel* was designed by Gunnar Cyrén to commemorate the fiftieth anniversary of the Nobel Prize. This series, too, was painted by Orrefors glassworks in the glass-painting studio at Strömbergshyttan. At the same time,



Vase from the *Caracalla* series, designed by Ingegerd Råman for Orrefors. The whitish decor was hand-painted, using both brush and fingers, over a black fond. The designer and the painter collaborated to develop the technique at the Orrefors glassworks. From Christina Lund's private collection.



Bowl from the series, *Svenska män och flickor*, by Gunnar Cyrén, hand-painted at Orrefors in the late 1960s. The painters at Orrefors are said to have developed a new paint that contained granulated sugar in order to produce the series. Photo: Jörgen Ludwigsson, Kulturparken Småland.

Designer Gunnar Cyrén

Designer Gunnar Cyrén writes in his autobiography of his experiences with painted glass-in the late 1960s: "I started as Art Director at Orrefors in 1968. ... Besides the Måtta glass that came out that year, I had also started with painted figures on glass. It was a series of exclusive glass bowls that I called 'Svenska män och flickor'— actually, men in uniform and girls, some with no clothes, others with clothes. The pieces had names like 'The Band', 'Out Cycling', 'Wedding' and 'Airplanes'. They were really celebrative, with lots of flags and blue-and-yellow ribbons. Very Swedish. Which made them a very suitable official gift to visiting dignitaries and the like. We also

produced service glasses, all with painted figures. There was a studio at Orrefors where Heintz Richter worked on those glasses. He also made graal posts. Heintz was a trained glass-painter, but he hadn't had the chance to paint at Orrefors before that, so I think he was especially inspired. He did very good work. I think I had the same kind of inspiration when I cut images out of the red casing. Like the bears, for example. ... I was inspired by Arabian painted glass — even though, generally speaking, I'm not too keen on Oriental art crafts. But I think I had seen some painted glass down in Istanbul, decorated with horsemen and such."



Another example of painting with transparent paint at the Orrefors studio. This piece was created in 1983 for the centennial celebration of Stockholm's Gröna Lund amusement park. Only two bowls of this kind were made, one of which was given to the park. The painter was guided by the designer's sketches. From Christina Lund's private collection.



A hand-painted glass from the popular series, *Maja*, designed by Eva Englund in 1977. Photo: Jörgen Ludwigs-son, Kulturparken Småland/Smålands Museum.

Ulrica Hydman-Vallien's painted glass had become so popular that the glass-painters at Åfors and Kosta could not keep pace. The great demand that painted glass enjoyed in the early 1990s led Orrefors to build an entirely new glass-painting studio in Sandvik's factory. At the studio's opening in May 1995 it was said to be the most modern glass-painting studio in Europe. Between 15 and 20 glass-painters were employed. *Clown*, a champagne glass designed by Anne Nilsson, was another popular product from Orrefors that was hand-painted in Sandvik.

Åfors

Ulrica Hydman-Vallien came to Småland and Åfors in 1963 when her husband, glass artist Bertil Vallien, joined the company. Hydman-Vallien was an established artist, but had not worked with glass. She built up her own ceramics studio, working in clay, which she decorated with figures, flow-

ers and patterns. It was Åfors' General Manager Erik Rosén who suggested that Hydman-Vallien try glass-painting. That was how her style came to cross over into glass, where it became a minor industry in itself.

She found some left-over enamel paint in the old painting studio and used it to experiment with painting on glass. In the beginning she fired her painting in her ceramics kiln at home. One of the first unique glass pieces and patterns she produced was a large bowl decorated with rats, '*Råttskålen*'. According to Margareta Arteus Thor, it was Ulrica's kind of joke, a parody of the 'default-mode' 50th-birthday present of the time.

In 1972, Ulrica Hydman-Vallien had her first one-woman show of painted art glass, and in 1976 she produced *Butterfly*, her first series, which was intended for export. In the beginning, those who



The so-called 'Devil' glasses from the *Nobel service* were painted in the studio at Sandvik. Today they are painted at Kosta.



Images from Lindblom's glass painting studio in Strömbergshyttan. The studio mainly painted for Orrefors. Among their major commissions was Eva Englund's *Maja* series. Photo: The Lindblom family's private archives.

painted her pieces did not sign them, but in time they began to add their initials after Ulrica's signature, 'Ulrica H V'. "*We had seen this done over at Arne Lindblom's studio in Strömbergshyttan, so we just started doing it, too,*" painter Eva Holub recalls. The first series identified in this manner was Hydman-Vallien's *Poem*. The practice then spread to glasspainters at Kosta and Sandvik.

Jacobs stege [Jacob's ladder] was a popular entertainment program on Swedish television from 1985 to 1988. The program host, Jacob Dahlin, had the habit of toasting his guests holding one of Hydman-Vallien's Caramba goblets, which had a distinctive snake motif. This serendipitous 'product placement' was an effective advertisement, transmitted in 'prime time' straight into viewers' homes. Eva Holub recalls the effect: "*At the start we were just a little group [of painters], but after Jacobs stege, it just took off!*"



One of Ulrica Hydman-Vallien's early works, which she also painted. Åfors glassworks, 1980s. Photo: Jörgen Ludwigsson, Kulturparken Småland/ Smålands Museum.



An early bottle in the *Butterfly* series, likely painted by Ulrica Hydman-Vallien, herself. The bottle is unsigned, which suggests that it is an early work. The paints used at the time were probably left-over enamel that remained in the painting studio at Åfors. Workers in the glassworks jokingly dubbed the series "Flying carrots". From Susann Johannisson's private collection.

In the mid-1980s, as Hydman-Vallien's painted glass became more and more popular, more painters and a larger studio were needed. The solution was to move the entire studio to a former gallery next to the glassworks. But as the popularity of Hydman-Vallien's series continued to grow, even the move was not enough. Åfors couldn't handle the volume. Consequently, her series came to be painted in Strömbergshyttan, Kosta and Sandvik. Some painting for Sandvik was done in Åfors.

Åfors glassworks assumed prominence in the realm of glass-painting thanks to its close association with Ulrica Hydman-Vallien's designs. The popularity her work enjoyed gave a boost to the entire industry in the region. Although she also produced glass that was not painted, it was her painted pieces that became her hallmark. As she herself put it: *"I make products that put people to work."*

Kosta

Erik Kjellander was foreman of the glass-painting studio at Kosta from the 1960s to the 1990s. He also worked with making so called clichés, used to transfer patterns onto glass. In the 1960s, Lars Gösta Magnusson joined the studio. He later succeeded Kjellander as foreman. Magnusson painted some of Ulrica Hydman-Vallien's pieces. He also trained new glass-painters at both Åfors and Kosta.



Glasspainters at Åfors in 1996. Standing: Monika Zimmermann, Anette Hermansson, Dorothee Schutzensdorf, Björn Boode, Lisa Zöbal, Cecilia Sjöström, Ulf Thor and Christina Areschoug. Kneeling: Lena Petersson, Gunilla Engström and Eva Holub. Photo from Björn Boode's private archives.

Hydman-Vallien's style of painting

The glass-painters hired by Åfors in the 1980's received special training in Ulrica Hydman-Vallien's particular style of painting. "We were immersed in Ulrica's spirit. We learned to think like Ulrica, with respect to how we painted," Eva Holub recalls. When they started, they were trained by veteran glass-painter Lars Gösta Magnusson, from Kosta glassworks. He taught them how to bray and mix the paint, to paint and fire, and told them which brushes to use. Hydman-Vallien hadn't been as careful as

Lars Göran. Among other things, she had mixed her paint a little more hastily, with the help of a palette knife. Both Ulrica herself and Lena Petersson, who was foreman at Åfors, later visited the studios in Kosta and Sandvik to demonstrate how Hydman-Vallien's patterns should be painted. Ulrica provided models the painters could refer to when they had longer series to paint. Generally speaking, the painters tended to paint more carefully than Hydman-Vallien did.

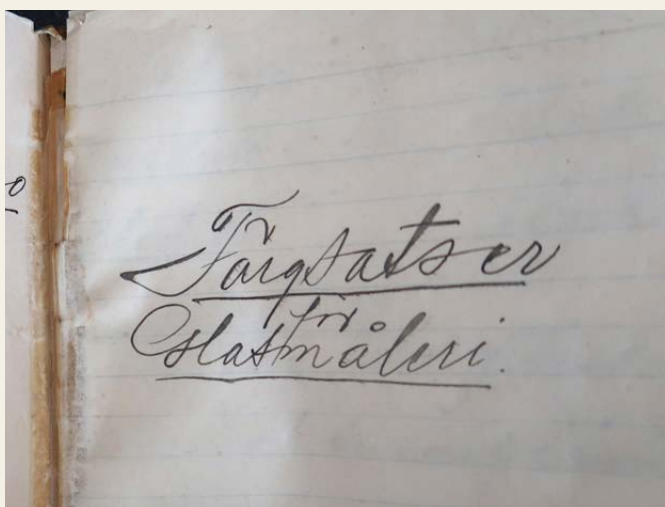
Åfors glassworks and the Zenkert legacy

The Johansson family acquired Åfors glassworks in the 1910s. (In time, they changed their name to Åfors.) Decades later, the Boda, Johansfors and Kosta factories were purchased by the company and organized as a group company, Kosta Boda. In 1990, Orrefors, Kosta Boda's principal competitor, acquired Kosta Boda. All five glassworks became affiliated with the New Wave Group in 2005.

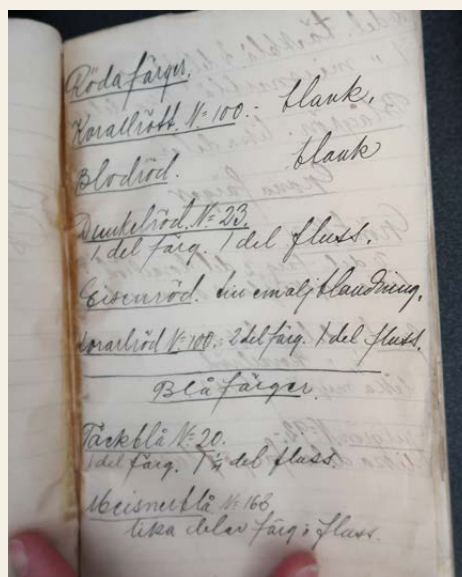
The Zenkert family have left their mark in Glasriket. Both Karl Zenkert's son, Karl Jr., and his grandson continued the family affiliation with the glassworks in Åfors – Karl as a 'flower-cutter' and the grandson as a glass-blower. Three of Karl Sr's four daughters became glass-painters. In the 1920s, Iris started helping her father paint glass in the Åfors studio at the tender age of 12. Her elder sister, Linda, also worked there. Linda later moved to Kosta glassworks, where she worked with, among others, designer Vicke Lindstrand. Hilda painted, too. She and her husband Edvin opened a small factory in Eriksmåla, which produced, among other things, glass marbles. Hilda painted them, turning them into the eyes of teddy bears, dolls, etc. The firm sold them to toy manufacturers.

In 1946, Iris moved to the town of Gullaskruf, where she continued painting glass, now-with her sister, Frida, and her husband, Edvin Swärd, in their privately owned studio. In 1953 Iris moved on to Nybro and started work at the firm, Smålands glaskonst [Småland's Glass Art]. Her surname was now Karlsson, and she signed her work Karlsson/Zenkert. In 1970, she started her own business. Iris' specialty was freehand painting. Both her technique and patterns reflect her Bohemian heritage. She inherited several patterns from her father. Iris was also skilled at firing. She recalls how some pieces required three or four firings in the kiln, to achieve the desired effect.

Karl Zenkert's legacy extends to the present day in the person of his great-granddaughter, Cecilia Almqvist, who first learned glass-painting from her grandmother, Iris. Cecilia worked many years in the glass-painting studio at Åfors. She later took over her grandmother's workshop, equipment and paint. Since the 2010s, she decorates funeral urns and coffins for a firm in Nybro, using both Ulrica Hydman-Vallien's patterns, her own patterns and Bohemian patterns that she inherited from her mother's maternal grandfather, Karl.



Pages in Iris Zenkert's personal recipe book. From Cecilia Almqvist's private studio.





Cecilia Almqvist still uses patterns from Bohemia that she inherited from her grandmother, Iris Zenkert. For funeral urns, among other things.



Ulrica Hydman-Vallien's design, combined with gold decor. From Åfors glassworks, 1990s. Glass painting experienced a renaissance thanks to Ulrica Hydman-Vallien. Photo: Jörgen Ludwigsson, Kulturparken Småland/Smålands Museum.



Ulrica Hydman-Vallien. Photo from the Vallien family.

Painted glass from Åfors – a success story

Margareta Artheus Thor, who has many years' experience in public relations in Glasriket and has written extensively on the industry, gives her take on developments at Åfors: "The success of glass-painting at Åfors under Ulrica's leadership was a local exception in the company structure as a whole. Painting at Åfors was an artistic oasis unto itself. It was only natural that it attracted attention. ... Naturally, I'm well aware that Ulrica, with her 'drive', was what set glass-painting at Åfors free again. Her work (Caramba, Tulipa, for example) became emblematic of Åfors and, by extension, strengthened the trademark Kosta Boda throughout the design world. It put Åfors on the map, commercially speaking, and it was no accident. There was a definite strategy behind it. Providing work for local women was a prime goal for Ulrica. Her building up the glass-painting studio at Åfors was

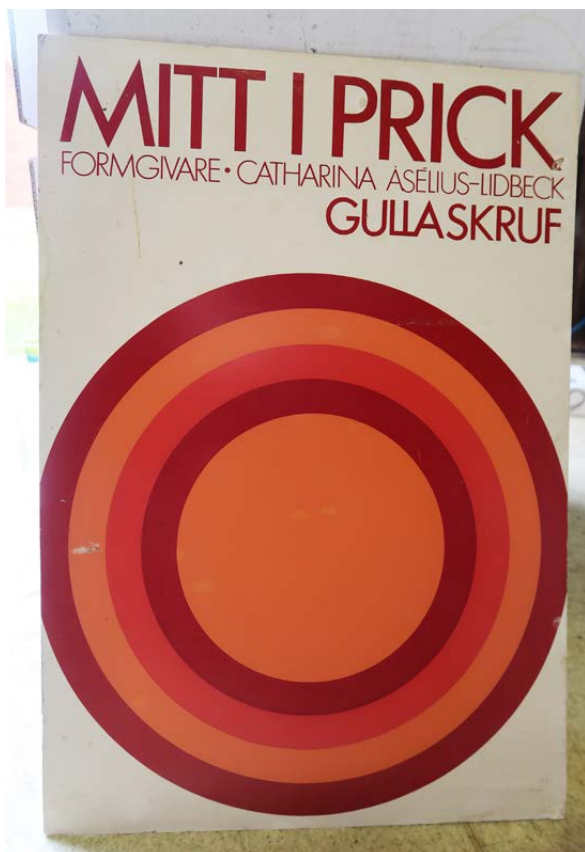
a real example of 'enterprising spirit' within the corporation. ...Over the years, I took many journalists to the glass-painting studio at Åfors, and they were very impressed with the craftswomen. Ulrica's 'business model' generated a lot of PR! That Ulrica had her own design and painting studio at Åfors meant that she – in time – became synonymous with Kosta's glass-painters and the company's unique history. I'm thinking especially about the painters who worked with Ulrica's products at Kosta. When Kosta celebrated its 250th anniversary, Ulrica, by now an international 'star', was there in the exhibition hall and proudly showed her painted glass to the assembled VIPs. Her presence, her very person, as an artist, fused Åfors and Kosta together in the eyes of the King and other guests that wonderfully festive summer day in 1992!"



In the mid-1990s, Erik Kjellander's daughter, Charlotta Kjellander took over as instructor, together with Birgitta Rönn. In the peak years of the 1990s painters worked in two shifts at Kosta, largely because of the great success of Ulrica Hydman-Vallien's designs. The studio employed about 25 painters. There is no disputing that Hydman-Vallien 'put people to work' – not only at Åfors, but at Sandvik and Kosta, as well.

Gullaskrufs glasbruk

Gullaskruf employed two glass painters in the 1950s and 1960s: Gustav 'Pedal' Karlsson and Paul Isling. Jan Karlsson recalls that several "ladies" also assisted in the painting studio; they handled the firing, transports, cleaning utensils, and packing finished goods. Gullaskruf's glass called *Mitt i prick* is a typical example of hand-painting of the 1960s. The design was created by Catharina Åselius Lidbeck. When "The Kronan group", to which Gullaskruf belonged, declared bankruptcy in 1977, the glass-painting studio in Gullaskruf closed its doors once and for all.



Gullaskruf's series, *Mitt i prick*, in a style typical of the 1960s, was hand-painted in the glassworks' own studio. The model was sketched by designer Catharina Åselius-Lidbeck. From the Andersson family's private collection.

Other glass-painting in Glasriket, in the latter half of the 1900s

Most glassworks in Glasriket produced some painted pieces, some more than others. Much depended on the factory's designer and the patterns he or she produced. Boda glassworks employed a single glass-painter in the 1990s, Ulla Ekström. She had learned the craft at Åfors. Nybro glassworks relied on Lindblom's glass-painting studio until 2003, when some of Lindblom's machine park moved to Nybro. Arne Lindblom's son, Anders, followed along with the machine park and continued painting there.

Other glassworks, not mentioned in the foregoing, that produced hand-painted glass in the latter part of the 1900s are Lindshammar, Rosdala, Målerås, Flygsfors and SEA glassworks.

In addition to the painting studios attached to glassworks, there were a number of independent studios in the region. Among them: Lindbloms glass-painting atelier, owned by Arne Lindblom, in Strömbergshyttan; Swärds glass-painting studio, owned by Edvin Swärd, in Nybro; Smålands alster (1948-1985), owned by Allan Lindeberg, in Kosta; and Smålands glaskonst in Nybro. Glass-painter Nils Stureson, Strömbergshyttan, had a studio in his home.

The craft

“When painting, you have to make absolutely sure that the paint is spread evenly, which strongly affects the beauty and lustre of the object. This is one of the most difficult challenges, and it can only be overcome through years of practice.” The quote, from 1933, expresses the combination of skill and long experience that is required to be a good glass-painter. A thorough familiarity with the characteristics of different paints, knowing how they are prepared and should be fired, and absolute concentration in both the painting and firing – all these things together make glass-painting a daunting craft.

There are numerous techniques for achieving different effects. Frequently, a combination of techniques is required. Or, the painter's techniques will have to be combined with another artisan's skills in order to achieve the desired effect. The painter's work may be finished in some other part of the glassworks – firing or glass-cutting, for example. Some effects are predetermined from the start, with the choice of paint and color, the structure and thickness of the paint, etc. Other effects are achieved when the paint is applied to the glass. The painter can apply it with a brush,



Christina Lund, who painted glass at Orrefors for many years, traveled often to exhibit her work, both in Sweden and abroad. The fashionable emporium NK showcases Lund and the craft in this newspaper advertisement in the Stockholm press.

roll it, stamp it, stipple it or spray it. In some cases painters use their bare fingers to achieve desired effects – either on the entire piece or on parts of it. Patterns can be created by masking part of the surface before painting – when using a stencil, for example – or by scraping away paint after painting. Pieces may even be decorated by attaching ready-made decals to the glass.

It is impossible to describe all the techniques that are used in a volume of this size. In the following we describe aspects of the painter's role and conditions in the workplace, as well as the various processes that glass-painting entails and how they have changed over time. This portion of the

study is based on interviews with several people who have worked in glass-painting studios from the 1990s through the 2010s, plus literature on the subject.

The painter's role

Many consider other work in the factories heavier and more demanding than work in the painting studio. *"Glass-painting can be more challenging than people think,"* says painter Charlotta Kjellander at Kosta. *"It's really precision work, demanding concentration and one's full attention. It can also be physically taxing, but in a different way than in the hot-shop. It's so stationary. In some projects, you really have to think about your every*

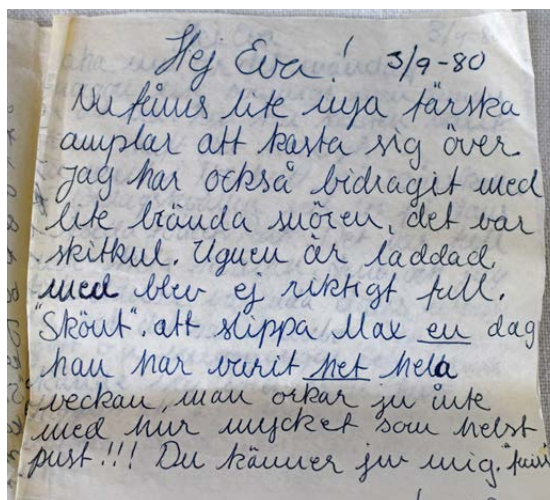
Glimpses of working life in the studio at Åfors

When painted glass was in great demand in the 1980s, Åfors glassworks hired two young women, Lena Petersson and Eva Holub, to paint Ulrica Hydman-Vallien's products. Since both women had young children, and no child-care was within reach, they both worked part-time. They took turns caring for the children; when one of them worked, the other minded the children. This arrangement meant that they seldom worked together, they mostly saw each other in the doorway. Consequently, they developed the habit of writing notes to each other – about the work at hand, what was done and what remained to be done, the day's adventures with 'Max', the temperamental kiln, and so forth.

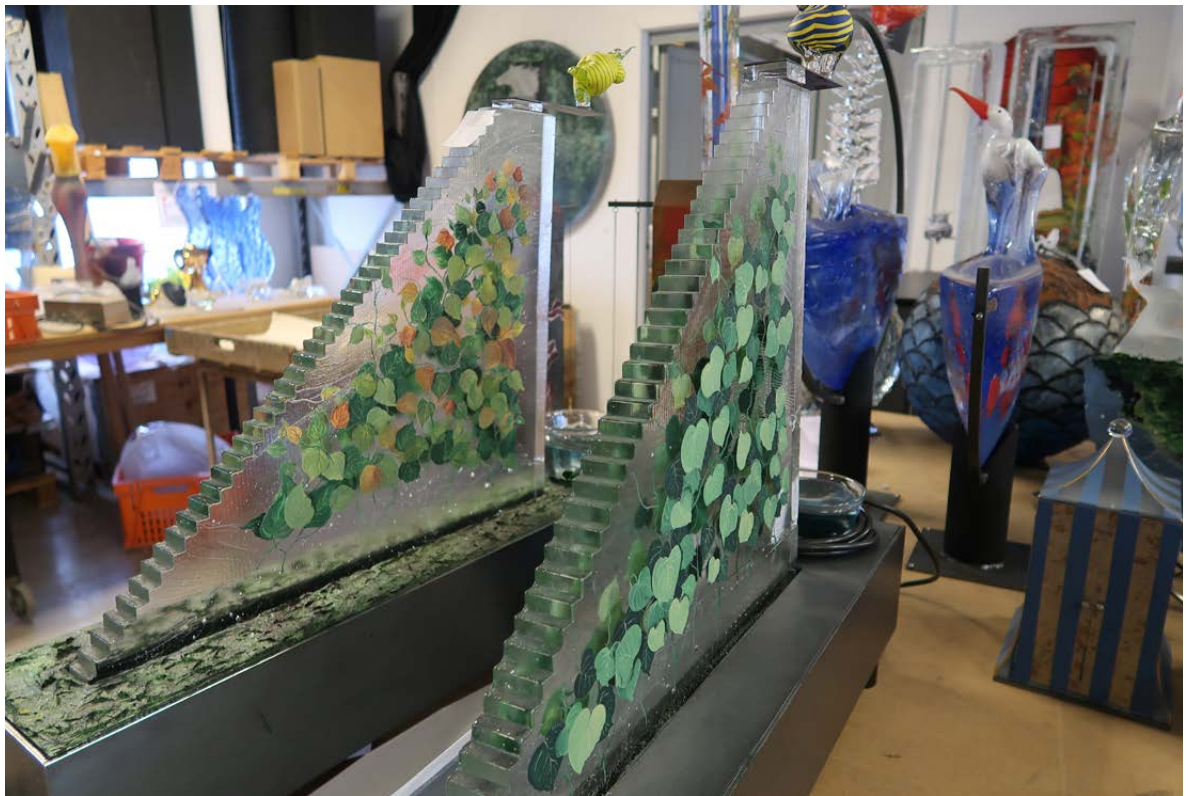
When the painting studio grew, Lena was made foreman. She was responsible for the inventory, for ordering paint, brushes and all else that was needed. She also operated the kiln. Ergonomics and various hazards became concerns a few years on. Lena recalls how in the beginning she sat and sketched at an ordinary kitchen table in Bertil Vallien's atelier. Later, her daughter Jenny would work closely with Ulrica.

Orrefors Kosta Boda AB shut Åfors glassworks down in 2012. The glass-painting

studio remained open until June, 2013, whereupon the team dispersed. That the group continues to get together several times a year testifies to the strong bonds of friendship that prevailed there. Eva Holub sums it up: "Lena and I started the same day, and we left the same day, in May 2013. After 37 years."



An excerpt from the lively correspondence between Eva and Lena in the early 1980s, in which events at the workplace are interwoven with vignettes from private life.



Unique decor painted by Charlotte Kjellander on glass designed by Kjell Engman.

move.” Kjellander on what it is to be a painter: *“You have to be truly interested in painting, otherwise the job would be rather boring. I have always drawn and taken art courses and really enjoyed it. All of us in the studio develop different skills in painting on different kinds of glass. We are good, and less good, at different things. We all have our own ‘tricks’, and prefer different brushes.”*

Clearly, glass-painters have to have a good deal of self-reliance, even though their work often consists of reproducing a designer’s concept. The freer the form, the greater the demands on the painter’s artistic sensitivity, creativity and initiative.

In Kjellander’s estimation, most glass-painters feel the designers respect them. But compared to other occupations in the glassworks, the work is considered ‘light’. Glass-painters clearly have less status than, for example, glass-blowers. As for their status outside the glassworks, in the public eye, Kjellander feels that painting is fairly anonymous work. Few outside the industry even think about the professional behind the decor.

Susann Diesner, whose grandfather, Karl Diesner, was a glass-painter recruited from Bohemia, sums up painters’ experience in his day: *“Glass-painting was a craft like any other, with lower status.”* At the same time, she recalls that Karl took pride in his work. On the occasions when glass-painting was exhibited outside the factory, at fairs and other events, the painters attracted a lot of attention. Painters took part in such events all over Sweden, and sometimes abroad.

A good example of the artistic freedom a glass-painter could enjoy vis-à-vis the designer is Charlotte Kjellander’s role in producing designer Kjell Engman’s unique art pieces. Engman often gives her only general instructions: “paint a snake” or “paint a few green leaves”. He relies on Kjellander, an experienced painter, to suggest and

develop motifs. In other words, she has quite some leeway and makes a vital contribution to Engman’s art pieces. It requires experience, artistic talent and courage. It is also a great responsibility, Kjellander feels.

The work environment

In earlier days glass-painting was not without its risks – to both health and the environment. Mainly, the problems had to do with the paint. Many painters also suffered problems with their necks and shoulders, as they had to sit, heads down, in full concentration hours on end. It was only in the late 1900s that a series of improvements were introduced that reduced the risks. Most important was the introduction of new kinds of acrylic paint, that are believed to be less hazardous. Suction fans and ventilated boxes were other improvements. In time, ergonomic stools and adjustable tables were introduced. When the cavalettes³ became electric-powered in the 1990s, the object being painted could be fixed in place by vacuum action. Being able to turn the cavalette at different angles brought all parts of the object into easier reach. The working position became less taxing.

The enamels traditionally used in painting glass contain heavy metals like lead and cadmium and solvents. The toxicity of the paint was not an issue before the 1970s. *“You were always a little fearful,”* says Lena Dahlman in 2020, recalling her first years as a painter. Once toxicity in the painting studio did become an issue, painters’ blood was tested every few months. Prior to that, only those working with melted glass had been tested.

Eva Holub recalls how it was in the 1970s: *“We sat there at our tables and painted. Then we put the glass aside and pulled out our lunch-boxes and ate at the very same table.”* Karl-Gustav Zenkert recalls: *“We used to use something that was really poisonous. Ammonium fluoride, I think it was called. They used it on a brush to make frosted*

³ A cavalette is a turntable or ‘carousel’ on which objects are placed when being painted. The disc turns, making it possible to paint all sides of the object without touching it.

surfaces on the glass. It was mainly used to make the flowers stand out better.”

In the 1990s enamels became connected with a new risk, with commercial- economic consequences. Consumers in North America had become aware of the possible toxicity of enamel used on glass. Kosta's and others' American market was in danger. Something had to be done. In the early 2000s two glass-painters from Åfors visited Diegel, a maker of paints in Germany that was working to develop 'non-toxic' paint. The new, acrylic paint for glass was to transform the craft.

Although most painting at Kosta is done with modern paint, some projects require the lead- and cadmium-laden enamel. For that reason, painters' blood is still regularly analyzed at least once a year. Glass-painters working at Kosta today speak of a serious awareness on the part of the company that paints can be hazards. Thanks to new equipment – suction fans and ventilated 'boxes', etc. – workers are no longer fearful of the paint they use. As an extra precaution, however, as soon as a glass-painter finds she is pregnant, she is assigned to other tasks.

Painting

Different painting techniques produce different effects. Paint can be applied with a brush, strippled, applied with a sponge, or sprayed. Other techniques for decorating glass can involve different kinds of printing and combinations of printing and painting. Glass-painters can also vary the lustre of the paint by mixing in various substances. Using 'sandblast-paint' produces a surface that looks sandblasted. In some series, patterns are created by scraping some of the paint off the surface.

Preparing the paint

Most of the glass painted at Kosta is produced on site. It arrives in the glass-painting studio in pallets. Paint is delivered in 5-kilogram metal cans.

The paint – referred to by its brand-name, Diegel – is acrylic, developed in the 2000s. This kind of paint does not keep as well as the old enamel. It also has to be kept frost-free. It is therefore delivered encased in polystyrene. Measures are also taken to ensure that it is delivered on a day before a workday, to avoid the risk that it might be left standing out in the cold.

The paint delivered comes in a number of primary colors. The colors are mixed at Kosta to produce many different colors and tints. Numerous recipes are kept on file, together with samples. Whenever a new series is to be painted, the first step is to test the paints. The recipes are expressed in weights, to ensure uniformity. Previously painted exemplars or color samples are used as reference points in the testing. It is the foreman's responsibility to ensure conformance.

The glass-painters start by stirring the paint thoroughly with a whisk. The paint is then poured into smaller containers as needed. Acrylic paint does not cover as well as the old paint, but is more viscous. It may need to be diluted, depending on the effect sought. It is generally diluted with distilled water. The Kosta glassworks distills its own water, which is also used in the batteries of the the glassworks' trucks. The proper consistency is essential to the final result. Each glass-painter makes his/her own judgment in this regard. The lustre of the paint is regulated by mixing the base paint with other substances, called 'media'. Media may also be used to achieve special effects.

The paint is then stored in small plastic bottles, from which it is poured into even smaller containers for the actual painting. Smaller containers mean less paint to keep track of, and it is easier to dip one's brushes. At Kosta they use plastic snuff-boxes. They are air-tight when covered and keep the paint from drying. Now the painting can begin.



Painted decor being detailed using a hard rubber 'scraper'.



Natural sponge is occasionally used to create special effects.



Sponges used to stipple paint.



Before starting to paint, a small pot of distilled water is set out. It is used to moisten and clean the brush.



Painters select the paint or paints they will need from the cabinet.



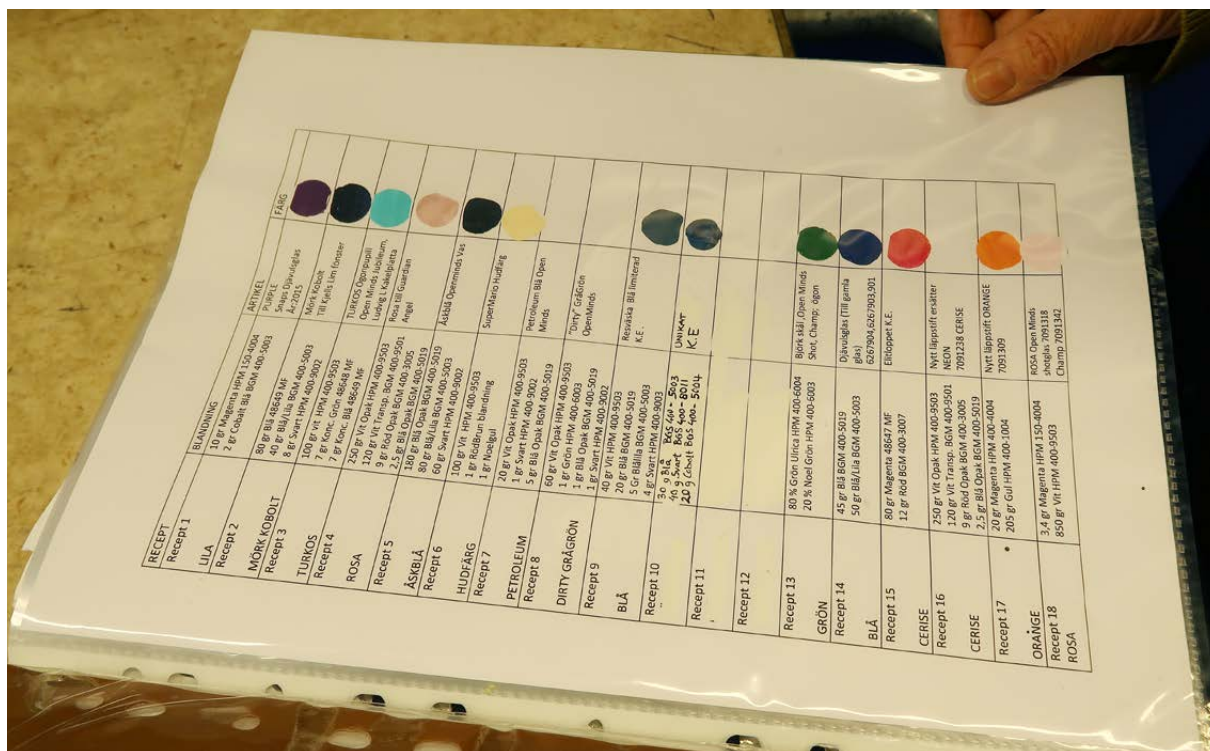
The cans are opened.



The paint is stirred with a whisk.



The paint is poured into smaller pots. The whisk is rinsed clean in water. Kosta glassworks has its own sewage treatment plant.



Recipes for different colors and nuances.



The color is clearly identified on each container.

Left-over paint that has been poured into smaller containers.



It is not easy to paint out of a bottle; paint is poured into small open containers. Plastic snuff-boxes are ideal for the purpose.



Painters at Kosta keep their paint in snuff-boxes, while painting and overnight.



Glazing paint used for spray-painting.



Sometimes paints are mixed in the studio. Powder pigment comes in bags.

The old enamel

Before the advent of acrylic paint in the early 2000s, glass-paint was 'fusible enamel'. This was produced with extremely finely pulverized glass, 'flux', mixed together with a binding medium and a solvent. Among the binding media used were damar varnish, fat oil, screen oil and base olja. Balsamic terpentine was the solvent, or citrus oil. Screen oil was diluted with water. For a time a water-based alternative that had a sharp odor was in use.

The old paints were hand-mixed by each painter individually at their benches. The pigment came in the form of powder in bags or cans. Even though the pigment was pulverized, there was always the risk of clumping. Therefore, the powder was crushed against a flat surface – a panel of glass, for instance – with a pestle, which, too, might be of glass. The surface of the bottom of the pestle was uneven. This practice was common well into the 1990s.

Starting in the 1990s, paint could be crushed in an electrically powered drum. The pigment is rotated in the drum together with ceramic marbles to become an even finer powder. The apparatus can be run for hours, even overnight if an extremely fine powder is desired. The drum is particularly useful when large volumes of paint are to be mixed.

In the earlier 1900s, many painters had their own recipes and 'tricks' to achieve desired effects. Unfortunately, very few of the old recipes have been preserved.

Free-hand painting, painting with brushes

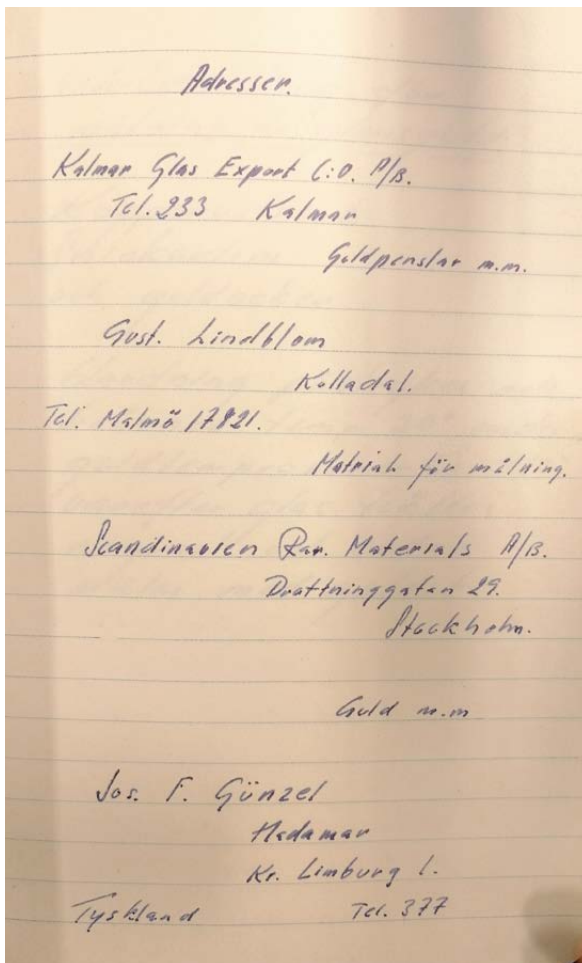
Now as before, painting on glass requires mastery of the techniques that produce the right shape of the stroke and the desired thickness of the paint applied. Most painted glass is brush-painted by hand. Freehand painting with a brush always produces some variations. This is sometimes even strived for; it reflects the work of the human hand and produces a more animated pattern.



Enamel paint used to be mixed by hand from powder pigment. From Cecilia Almqvist's private studio.



Free-hand painted glass. The motif is typical of the period around 1900. From Cecilia Almqvist's private studio.



An address list showing some suppliers of paint in the mid-1900s. From Erik Kjellander's private archives.



A pestle of glass was used to "bray" pigment against a flat surface, often glass. The bottom of the pestle has been 'roughed' or treated with acid; it should not be slippery. From Cecilia Almqvist's private studio.



The glass has been placed on a cushion to bring it up to a comfortable height. The painter supports her elbow on the bench.

As for decor that was typical of the different glassworks, glass connoisseur Peter Lejon says that popular motifs were widely copied, so that it is sometimes difficult today to be sure of exactly where glasses of older vintage were painted. But, if one is very familiar with the work of an individual painter, the painter's individual traits will generally reveal his/her identity.

To ensure some measure of uniformity, each work station usually has a reference model painted by the artist/designer or the instructor. Different patterns require different kinds of brushes. For example, if the motif calls for a fine, sharp line, you may want a brush with an oblique edge. Painters have their own set of brushes and methods. How they use their little finger to steady the hand when drawing a straight line, for example. Elbows, too, provide support and steady the hand. Wooden

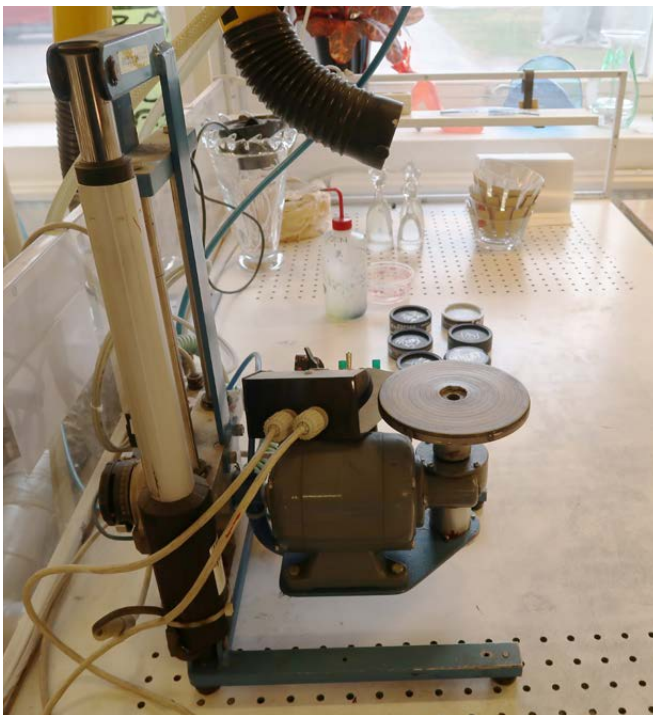
supports may also be fastened to the bench for the painter to rest an arm or finger against for more stability.

In the studio at Kosta painters use both older cavalettes that are turned by hand and modern electric cavalettes equipped with compressed air that allows the object to be fixed in place by vacuum action. The latter apparatus makes a whirring or rushing sound that can be annoying; it is mainly used to paint hard-to-reach parts of an object. There are also suction cups that can be fastened to the inside of an object, so as to give the painter access to all parts of a surface, even the bottom.

Brushes need to be washed immediately after use. The modern, water-based paints can be washed in water.



Free-hand painting with a brush. The glass stands on a cavalette that can be turned to give the painter free access to all sides of the object.



A bench furnished with a cavalette, a turntable that allows access to all sides of the object.





Free-hand painting with a brush. The painter holds the glass at the desired angle.



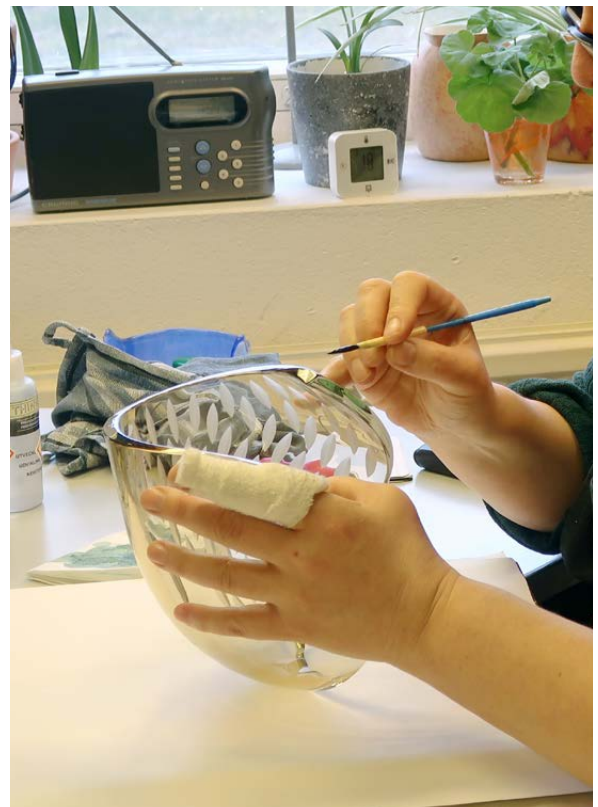
A workstation in the painting studio at Kosta, 2020.



Kjellander chooses a brush.

Brushes

Brushes made of marten hair have long been most popular for painting glass. In the past, brushes made of the softer hair of squirrels were also used. One's choice of brush strongly influences the result. Marten brushes of good quality are still widely used. They are also compatible with modern paints. The characteristics of the new paint are quite similar to traditional paints, but the new paint dries much more quickly – which, of course, affects the painter's strategies. Each workstation is furnished with small bottles and distilled water. If several colors are in use, idle brushes can be kept in water. Hydman-Vallien, holding up her brush, told Åsa Jungnelius: *"I get urges to paint on all kinds of things. I paint my splotches, and this is the best brush ever for doing that. I found it in Japan back in the eighties."*



Free-hand painting.

Painting with "hi-temp" paint

Even after acrylic paints had largely replaced enamel, some projects required its use. The reason is that enamel withstands higher temperatures. When a painted piece needs to be fired at 1200° C (about 2220° F), a special kind of enamel, referred to as "hi-temp", is called for. A typical use occurs in graal production, when a painted post, or core, needs to be melted and then coated with other glass. Before the post can be fired in the kiln, it has to be warmed up slowly in a what is referred to as "the sausage box". After firing and blowing, the piece is brilliant, in contrast to how it looked beforehand, when the dried paint has no lustre.

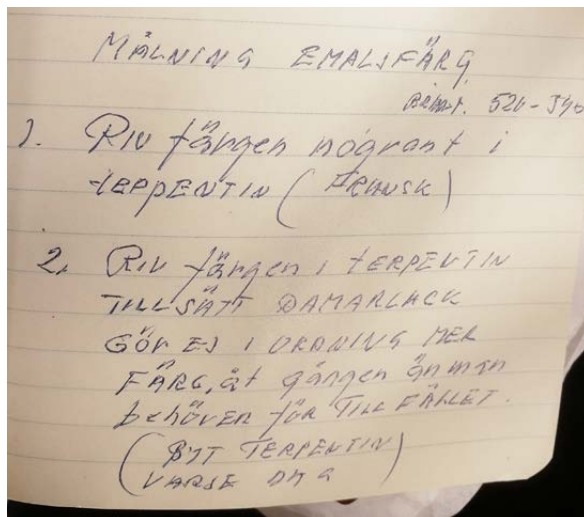


One of the principal differences between enamel and plastic paint in terms of function is that enamel withstands higher temperatures. Therefore, it is sometimes necessary to use enamel even today – despite its toxicity. For example, when painting a piece before it goes into the kiln.

Enamel is also more resistant to abrasions than acrylic paint is. But when applied to glass, it cannot stand the heat and wetness of, say, a dishwasher.

Modern enamel is composed of a powder called 7002 *Målarmedium* and water. The paint is mixed in a ventilated box because the powder contains toxic lead and cadmium.

One well-known example of production using hi-temp paint is designer Bertil Vallien's glass heads, which are 'dusted' with silver. The heads are first painted with red hi-temp paint. Then, while the paint is still damp, dry silver powder is 'puffed'



An old note about how to bray and paint with enamel paint, and suitable kiln temperatures. From Erik Kjellander's private archives.



'High-temp' paints containing precious metals are painted in a ventilated box.



Glass sculptures by Bertil Vallien in a drying chamber before being painted a second time or being fired.



An ordinary drying cabinet will do for some steps in the process.

with the help of compressed air over the head and fastens in the paint. This process takes place in a ventilated box, so there is no need for the artisans to wear protective gear. The glass heads are placed in an ordinary drying cabinet while the paint dries before the pieces are fired.

Painting with gold, silver and bronze

Painting with metallic paint is uncommon, from early Antiquity to the present day. Metal paints are difficult to use, however. Gold is the most common metal used to decorate glass, but silver, bronze and platinum (which resembles silver) are also used. Gold comes in three forms: bright gold, gold powder and burnish gold. Burnish gold becomes shiny after it has been polished, whereas bright gold gleams directly after being fired. Decorating glass with gold has been popular for centuries. Kosta glassworks produced gold-painted items in the 1700s. Demand for them continued



Vase by Ulrica Hydman-Vallien. The decor is bronze, painted at Kosta.



Painters at Kosta wear rubber gloves to keep paint off their hands when painting with gold. Here the paint is stippled using a natural sponge.

through the 1800s and into the 1940s. Thereafter, demand dwindled, only to rise again in the 1980s and 1990s, thanks to Gunnar Cyrén's *Nobel* service and Ulrica Hydman-Vallien's painted work.

Today, Kosta uses 23-karat gold to achieve bright gold. The gold is delivered in liquid form. The tiniest grain of dust on the item painted will form a fleck on the surface, which ruins the effect. Gold, after all, should gleam without impediment. Painting with gold also demands utmost precision. The glass surface must be absolutely clean, without as much as a fingerprint. Often, the glass is cleaned with a damp cloth and then treated with thinner. Another technique is to fire the glass at 400° C (about 750° F) and then dry it with a damp cloth. Gold has always been expensive, delicate, and hard to handle. Nowadays, gold is fired at higher temperatures than the modern paints, at between 480° and 520° C (about 900°–970° F). Platinum can be fired to create a silver

effect. Liquid gold is very difficult to remove from one's skin. Therefore, those who paint with it wear gloves.

Painting with sandblast-paint

Painting glass with sandblast-paint is simpler and cheaper than sandblasting decorative patterns in the glass-cutting studio. Painting with sandblast-paint gives a frosted effect. The surface will survive a dishwasher, but is sensitive to cuts and scratches. For that reason the technique is used on art glass, but not service glass. Objects painted with sandblast-paint should not be fired at too high temperatures; they can turn yellow. One advantage of painting with sandblast-paint is that there is no risk of fingerprints on the glass surface, which is a common hazard when glass has been sandblasted in the glass-grinding studio.

Painting with sand

Looking at Kjell Engman's art glass, one might think he had cast the objects in sand, but that is not the case. The rough surface is achieved by other means. Engman, together with his former assistant Maria Lorenz, developed many different procedures with different effects – one of which is 'painting with sand', developed in the mid-2010s. Briefly, the method is this: You paint the object with a generous layer of paint, sprinkle sand over the damp paint, let it dry in a drying cabinet and then paint over the sand. The result is a rough painted surface that bonds after firing.

Lorenz, who worked together with Engman between 2006 and 2016, works in the glass-painting studio at Kosta. She has painted many of Engman's sand-painted pieces.

Painting with sand actually has a fairly long history. The method has been used in Europe since at least the early 1800s. The technique may be much older. Åfors glassworks experimented with painting with sand in connection with an exposition in Paris, (*Exposition Internationale des Arts et Technologies dans la Vie Moderne*) in 1937. The surface was painted, sand was strewn over the



A prototype from Åfors glassworks, 1936. The entire glass surface was painted with sand and then fired. Then, the motif was painted with enamel, and the piece was fired again. Vase from Karl-Gustav Zenkerts private collection.



A horse with a rough surface. An example of painting on sand, a technique developed by Kjell Engman. From the glass painting studio at Kosta.

wet paint. This was fired in the kiln, so that the sand fastened. Then the motif was painted and the piece was fired again. The method proved too costly, however, and was abandoned.

Painting with asphalt and sugar

The 'graal vases with fish' designed by Edward Hald in the 1930s are prime early examples of glass painted with Orrefors' secret method of painting with asphalt. Glass-painter Christina Lund at Orrefors describes the process: The posts, which form the center of the graal vase, were sent up from the hot-shop to the glass-painting studio. They consisted of a heavy layer of green glass over clear glass with a thin layer of black on top. The glass-painters generally drew the pattern (fish,

seaweed, stones) freehand with a lead pencil and then filled in the contours with the secret ingredient, asphalt. The asphalt had been mixed with red lead oxide to make it more durable. The asphalt mixture was painted on the parts that should be black. Then, it was left to dry thoroughly. The next step was to dunk the parisons in an acid – six on each rack. The acid took away the black paint on the surface, to reveal the green glass underneath – green, except where the asphalt had been painted. After the acid bath, the asphalt was washed away. Then the pieces were sent back down to the hot-shop. There, a new outer layer of clear glass was added before the vases were blown into their final form.

In the 1970s, the glass-painters developed a new paint that contained granulated sugar. This paint had a different consistency, a different medium, than ordinary paint. This 'sugar-paint' was used to paint contours on a glass series designed by Gunnar Cyrén. Then, the fields within the contours were painted with a transparent enamel, mixed with turpentine. That way, the two colours had different values and, above all, they didn't flow into each other.

Painting with a scraper

Another way to make patterns on glass is to remove paint from a painted surface. At Johansfors in the 1950s they invented and constructed a tool to produce striped glass in this way. The tool had several arms with small rubber scrapers fixed to the ends. First, the entire glass was placed on a

cavalette (turntable) and painted with a broad brush. Then, while the paint was still wet, the painter put the glass in the apparatus and pulled it out. The result was a striped glass (see image, page 27). Both method and tool were kept secret. According to Bert Jonsson the invention, which never had a name, was even tucked out of sight whenever outsiders – including Erik Åfors, the factory's new owner – visited the studio. Unfortunately the tool went missing at some point, and there are no photos of it. Since the 2010s, Nybro glassworks makes striped glass, but there, the paint is removed by hand.

Patterns can be made using a hard rubber scraper mounted on a brush-handle. Ulrica Hydman-Vallien's *Caramba* series has such a detail. Today, the paint is removed while still wet. In the days of enamel painting the paint had to dry before it could be scraped. Since the paint was toxic, the scraper was attached to vacuum tubing that collected the flakes of paint.

Staining glass

Glass can be decorated by coloring the surface and then scraping away the coloring to make the motif. This process was work-intensive, involving the melting furnace, the painting studio and the glass-cutting studio. The method is called "Gelbat".

Spray-painting

Painting with air

Painting with an airbrush is another way to paint an entire glass surface. The transparent enamel gives a delicate sheen. It is impossible for the naked eye to see that the color is only on the surface. Glass designed by Ludvig Löfgren for Kosta-Boda in the 2000s are good examples of the technique. Opaque paint can be airbrushed, too. A surface may be airbrushed in its entirety or only partially, to create a pattern.

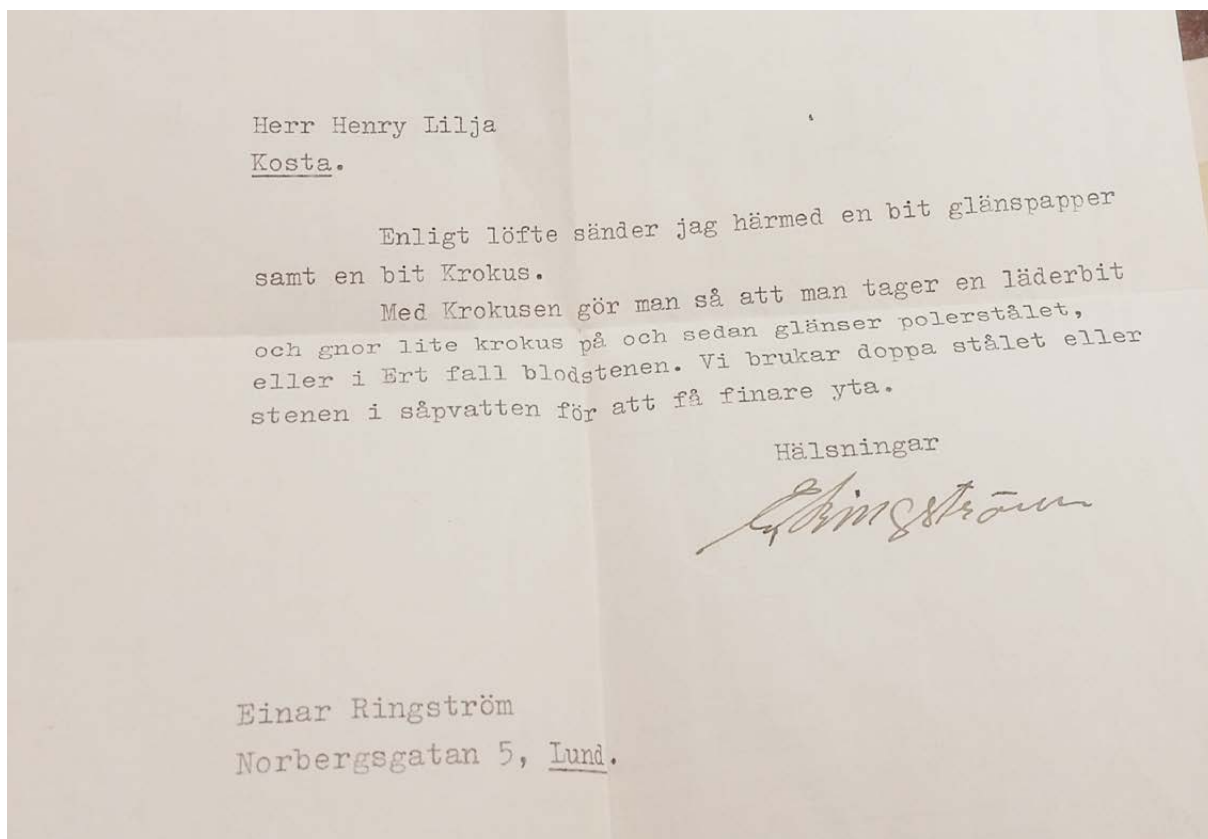


Stained (*gelbat*) glass from Åfors glassworks, 1940s. From Karl Gustav Zenkert's private archives.

Painting with an airbrush is rather difficult because the paint dries very quickly. Sometimes airbrushing is used to produce prototypes quickly. Dramatic effects can be achieved using special paints, such as copper. Airbrush pistols require a thinner paint. The paint is filled in small cartridges attached to the pistol; the pistol in turn is attached to a tube with compressed air. The air is released by pressing the trigger. It is important that the paint cover the object evenly. The work is done in a ventilated box with effective suction. After painting the pistol is cleaned using a combination of ultrasonic vibration and water.



Spray-painted glass, produced by Ludvig Löfgren for Kosta-Boda, 2010s. From Cecilia Almqvist's private studio.



A letter from 1953 explaining a special technique for enhancing surface lustre.



Ventilated box and airbrush equipment.



The ultrasonic washer, used to clean airbrush nozzles.



Airbrush pistols.

Decorating glass using decals, clichés and stamps

A way to save time and effort is to use stencils, stamps, *clichés* or pre-printed decals. These aids are most commonly used to produce or reproduce logotypes. Sometimes only the contours are printed, and the fields within are painted by hand with a brush or airbrush.

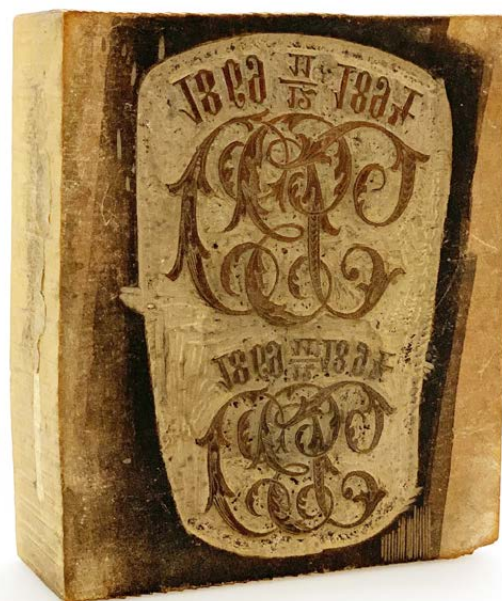
Logotypes on glass

Nowadays, the glass-painting studio at Kosta uses decals to transfer patterns onto glass, especially in connection with logotypes. The decals – produced by a local firm, Elgporslin AB – consist of powdered pigment on paper, covered by a film. The firing temperature may vary, depending on the effect one aims to achieve.

The pattern is transferred onto the glass surface, as follows: First, the film is soaked in lukewarm-to-warm water. When it has been placed on the glass, the protective film is removed. Then, care is taken to make sure that the decal rests flat on the surface, with no bubbles in between. The painter uses her hand and a damp cloth. The piece is then fired in the studio's kiln. Temperatures vary widely: from 150° to 550° C (300°–1020° F). Another way to make logotypes is to sandblast the logo in the etching studio and then add color by airbrushing them in the glass-painting studio. This is easiest if only one color is involved. Otherwise, different parts of the piece will have to be covered and each color fired separately – a both time-consuming and expensive process. Price notwithstanding, some prizes are produced this way. Logo-bearing crystal is a common prize in contests and other kinds of public recognition in Sweden.



It is said that the painters who immigrated from Bohemia around 1900 experienced a notable difference between their traditions and Swedish practices. In Bohemia, free-hand painting was the rule, whereas Swedes often used stamps, with which they pressed motifs onto glass. Here is a collection of antique stamps. From Cecilia Almqvist's private studio.



A reversed-pattern stamp. Photo: Björn Arfvidsson, Kulturparken Småland/ Smålands Museum.

The roller is rolled in varnish and then rolled against the glass surface, from which the pattern is transferred to the glass. From Cecilia Almqvist's private studio.

Stamps

An older method for reproducing an identical pattern many times was to use stamps. The practice seems to have been relatively common in Glasriket in the years around 1900. Making and using stamps is not as simple as it might sound. It required considerable craftsmanship. The stamps were made of wood, cork or rubber. Records from Kosta show that patterns for stamps were carved in boxwood in the 1880s. The carved pattern was then stamped in clay, which was then fired. The clay pattern was then used to make a stamp in a 'jelly-like' substance. Using a small, hard roller, 'varnish' was applied to the surface of the stamp. The stamp was then applied to the glass, whereby the transparent 'varnish' was transferred to

the surface. Powdered pigment was then dusted over the surface, where it fastened in the 'varnish'. When fired, the pigment colored precisely the pattern that had been varnished.

Stamps were sometimes used to print contours. The surface within or around the contours were then hand-painted using a brush.

Common motifs were family crests, restaurants' emblems, and firms' names, but many other images and texts were printed. The stamps were especially useful for long series. The method was used not only on service glasses, but on lamp-glass, as well.

Clichés

Before decals or sandblasting of logotypes had been developed, plate-metal clichés were used to mass-produce logotypes and other images on glass by means of acidic etching. Exactly when this technique started to be used in Glasriket is unknown, but it was probably toward the end of the 1800s.

The method was exacting in the extreme. One can only admire those who sat, hunched over the difficult clichés – doubtless in hopelessly un-ergonomic conditions, poor lighting and non-existent ventilation. In some cases, the pattern had to be produced as a mirror-image, depending on whether it was to be viewed through the glass – say, through the foot of a glass – or on the glass.

One of those who mastered this technique was Erik Kjellander from Kosta. During his active career he worked in private glass-painting studios like Lindbergs Måleri and Ville Franzéns måleri,

but also at Kosta glassworks. He worked sometimes at the factory, sometimes at his studio in the cellar of his own home.

Erik Kjellander's daughter, Charlotta, describes the process:

Making the plates

1. The pattern is drawn on thin, transparent paper using a very sharp pencil.
2. Red lead oxide is painted on the back of the paper, covering the entire pattern.
3. The paper is laid on an iron plate and the pattern is drawn again, following the same lines, using a sharp implement, like an awl.
4. The parts of the glass that are to be frosted are painted with black asphalt laquer.

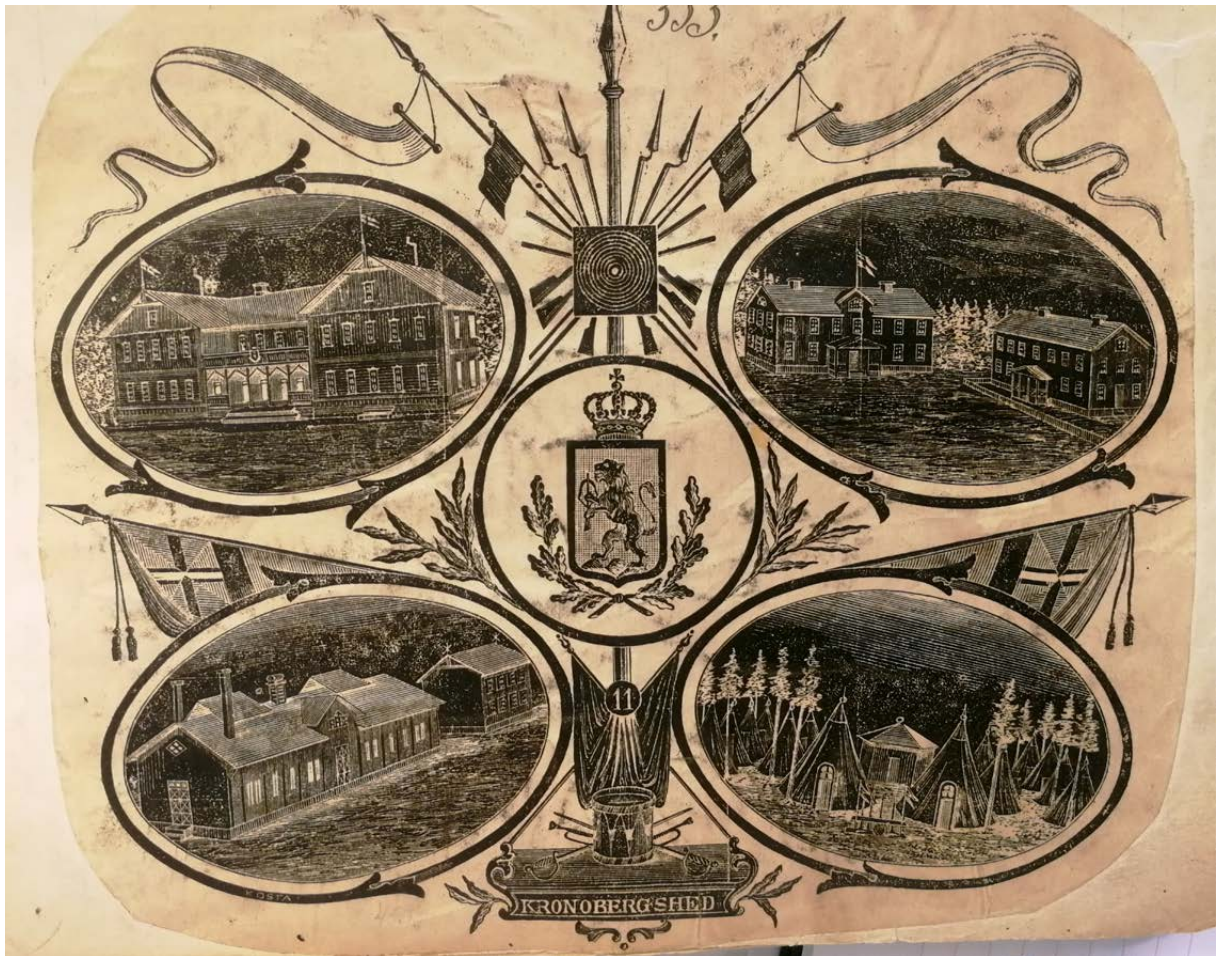


Steps 1, 2 and 4 in the creation of a cliché.

1. A pencilled motif.
2. The image is transferred to a plate (using red lead oxide).
4. The image to be applied to the glass.



Albums of logotypes, etc. that were applied to glass using clichés. Many of Erik Kjellander's patterns and recipes have been preserved.



A cliché motif used on a tankard produced to commemorate King Oscar II's visit to Kronobergshed in 1893.

5. A small ridge is made around the image using bee's wax. A mixture of one part nitric acid to two parts water is poured inside the ridge. Erik Kjellander's notes say that this shall be done "in ten portions, ten seconds each". The acid burns the iron plate, except the areas painted with asphalt. The result is a 'metal stamp', in which the lines to be etched on the glass stand raised.
6. The asphalt lacquer is rinsed off with thinner. Now the plate is ready. The plates could be used again and again. Whether any such plates have been preserved is not known.

Transferring patterns to the glass

7. Wax is applied over the image on the plate with a putty knife. The wax is massaged with the knife until it softens and fills all the depressions in the pattern.
8. Any excess wax on the surface is removed.
9. A thin tissue paper is laid over the plate. A roller is rolled over it until the motif has fastened on the thin paper. When the paper is taken off the plate, it bears a negative image of the motif to be etched on the glass.

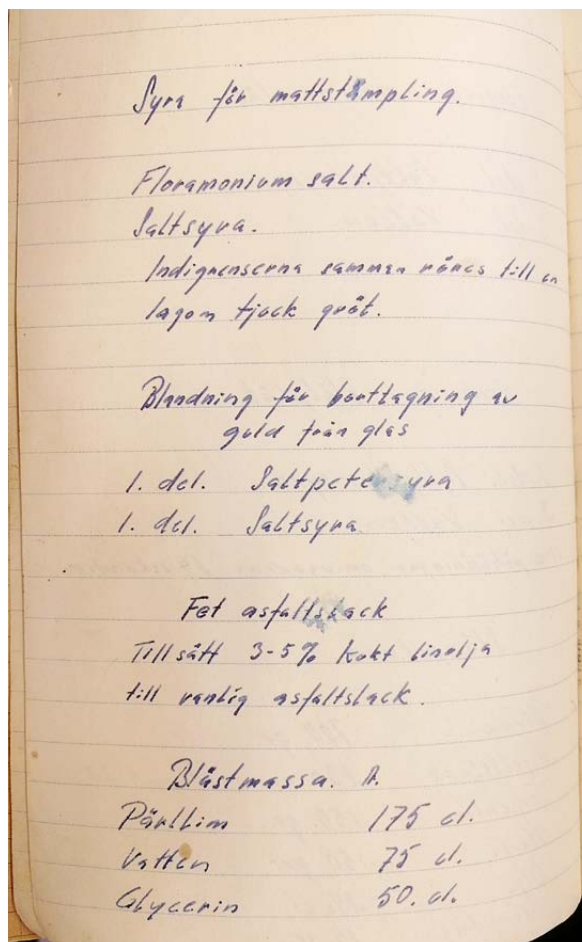
10. Now the image on the tissue paper can be transferred onto the glass. The tissue paper is pressed against the glass so that it fastens. The paper is then brushed with acetum (vinegar) so that the paper can be removed, leaving the bee's wax motif on the glass.
11. Acid is brushed onto the glass, over the pattern. All of the surface not covered by wax will be frosted; the surface covered by wax will be clear. That is how the motif becomes visible.
12. Finally, the glass is washed in near-boiling water, heated by immersion heaters, to remove the wax. Any remaining wax is removed with thinner. After that, the glass is generally washed again, this time with detergent, and then rinsed and dried.

Firing

The introduction of acrylic paints around the year 2000 meant that kiln temperatures could be reduced radically, from around 500° C (1020° F) to between 135° and 150° (275- 300° F). Another major difference is that acrylic paint, unlike enamel, has the same color before and after firing.

Kosta has a kiln in which glass can be loaded onto a conveyor belt. One can choose different speeds, times (often 3–5 hours) and temperatures, up to 550° C (1020° F). The kiln now used in Kosta is a veteran: it previously did service in Lindblom's glass-painting studio in Strömbergshyttan, and in Sandviks glassworks. The decorating Lehr is located in one of the packing halls, together with three other medium-sized kilns, and a small one.

The pieces to be fired are placed on trays that are stacked in racks on wheels. The entire rack is rolled into the kiln on a trolley. When the rack is in place the trolley can be lowered and removed from the kiln, leaving the rack of glass in place. The pieces must not touch each other, as the paint would melt them together. The door of the kiln is then closed, and the temperature is selected



Recipes used in the process of transferring motifs using clichés. Från Erik Kjellander's private archives.



The smaller kilns at Kosta.

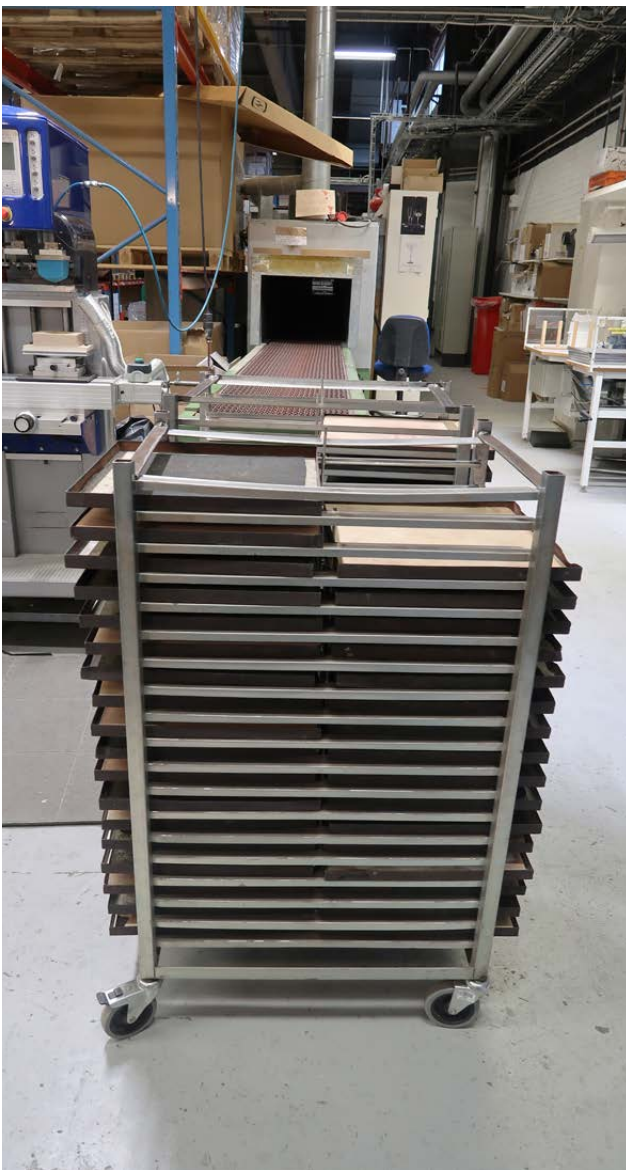


The Decorating lehrat Kosta. The oven once belonged to Lindblom's glass painting studio in Strömbergshyttan, a studio that, for some time, was owned by Orrefors glassworks.



on a control panel. After firing, the kiln and its contents are given time to cool before the pieces can be removed. They are removed by hand, as well.

The most commonly used paint at Kosta today is generally fired at 135° C (275° F). Sandblast-paint and enamel cannot be fired at too high temperatures; they will turn yellow. Gold, platinum and bronze are fired at about 500° C (930° F). Once the kiln has been correctly programmed, all the workers in the painting studio can operate it. The paints have been tested for the temperatures most often used. The kilns used today are electric and made of plate metal. The heat source and fans ensure the proper temperature throughout. Fans circulate the air. The thin metal walls are insulated.



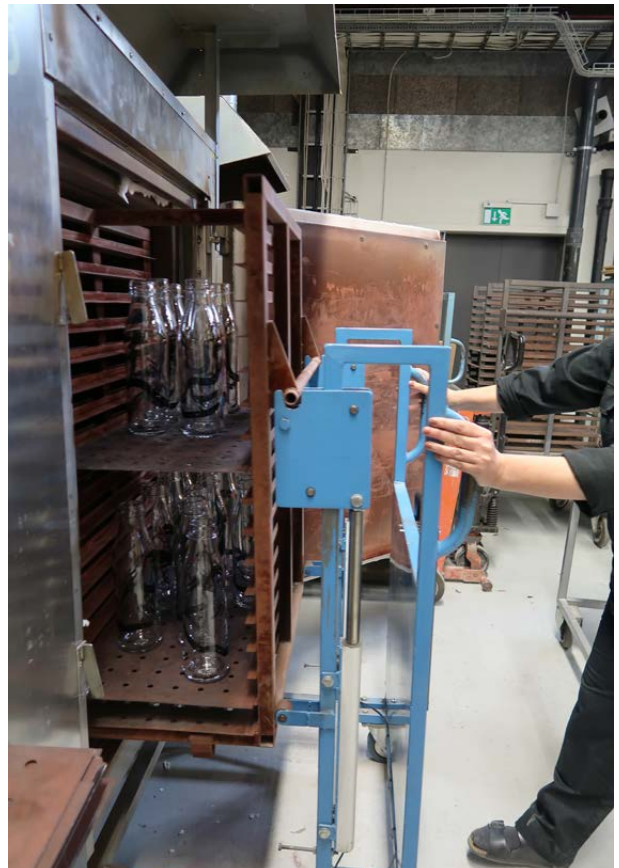
A rack with trays for glass that is ready to be fired.



Painted glass is moved manually from the studio to the kiln – in this case by Diana Valle and Susanne Sjödin. The pictures show a kiln in Kosta, in Spring 2020, being emptied and then filled with new glass to be fired.



Fired glass is removed from the kiln.



The kiln is filled with new glass to be fired.



The door is closed and the heat is turned on.



Kiln in the glass studio at Johansfors.

Kilns of yesteryear

The kilns used to fire glass paint in olden times, up to some years into the twentieth century, were called “muffle kilns”. They had double walls of heat-resistant brick. There were peepholes in the walls to allow workers to see what was happening in the kiln.

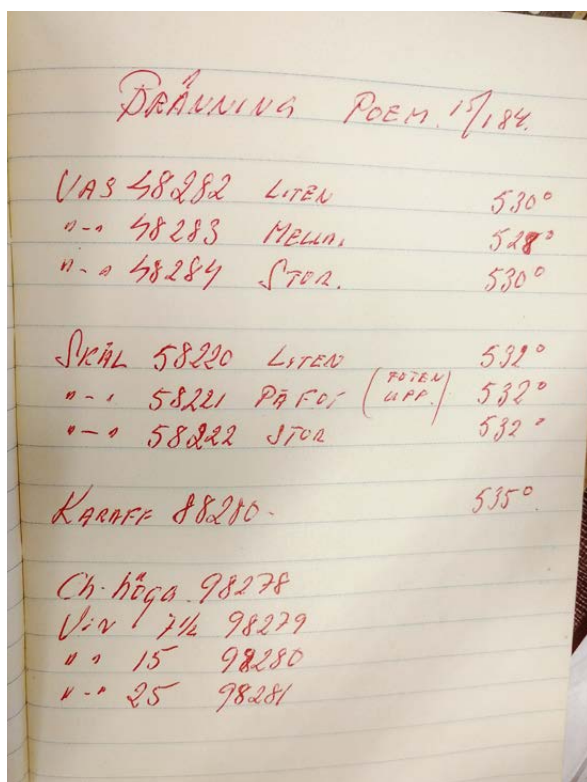
The point of firing is to bring the glass up to the temperature at which glass and paint bond. Attaining the exact temperature was crucial. Too low a temperature left the paint without lustre, or it could take on another color than was intended. Too high a temperature could cause the piece to melt and change shape. To ensure that a whole load of glass wouldn't be ruined, test firings were often conducted, to see if different paints melted at different temperatures. It was only possible to see the final appearance of the paint after firing.

It generally took many years to master the art of achieving the right temperatures in the old wood-fuelled kilns. Wood could produce varying and unpredictable temperatures. For that reason, responsibility for wood-firing was often entrusted to a single person or a select group. Karl-Gustav Zenkert remembers Frans August Karlsson, who oversaw firing at Åfors in the 1950s. He had no particular method of testing the temperature;

he simply looked into the kiln to see if the paint bubbled ‘just right’. He was also expert at loading the kiln. Loading, too, was an art, as temperatures varied in different parts of the kilns. Pieces painted with more easily melted paints should be placed in the least warm parts of the kiln, and vice versa. If pieces stood too close together, they might melt into each other. Or, the paint would be ruined.

The glass-painting kilns had to reach a temperature of 500°–550° C (930–1020° F), which was quite different from the temperatures in the furnaces used to melt glass in the hot-shop. But the temperature needed to follow a certain ‘warming curve’. At the start, the temperature should increase slowly; after a certain point it should increase more rapidly. This, too, required expertise.

All paints had different melting coefficients. As a control, an object painted with a paint that melted at a temperature between the extremes was placed where it could be seen through the peephole. When it melted (‘reached flux’), the firing was stopped. Another safeguard strategy was to place small glass pyramids, called ‘Seger pins’ in different parts of the kiln. These were of different hardness and melted at known temperatures. When one of them started to melt and change shape, it



Notes showing appropriate firing temperatures for different pieces. From Erik Kjellander's private archives.



A glass bottle from the early 1900s, where the bottle itself melted during the firing of paint. Glassworks unknown. Photo: Björn Arfvidsson, Kulturparken Småland/Smålands Museum.

served as an indicator of the heat in that part of the kiln.

Gold was to be fired at the highest possible temperature, around 500° C (930° F) or higher. While the temperature was rising, the kiln was opened briefly to release organic gases. This was done to keep the gold from changing color or blurring. There was also the risk that it might not bond properly. Firing of bright gold demanded significantly lower temperatures. As soon as the gold

begins to shine, the firing should be stopped. After the stoking was stopped, the glass should be allowed to cool at least 12 hours. If the kiln was opened too soon, the pieces might crack.

All in all, one can say that the kiln was among the most important instruments a glass-painter had, and firing posed by far the most difficult challenges.

The studio itself



The glass painting studio at Kosta has been relocated several times. Today, it is centrally located, alongside the glass-grinding works.

With electrification, the studio no longer had to have access to a brick kiln and chimney. The kilns used today might be installed anywhere. The glass-painting studio at Kosta has had several different locations over the years. At present, the kilns are located in a packing hall, some distance from the studio. Only one small kiln stands just outside the studio. Kilns do have to have fans and access to ventilation channels that can capture emissions,

particularly when gold and platinum are fired. Also, as glass-painting itself requires a number of installations, it needs a designated space. The studio must have adjustable work-benches with suction and vacuum equipment, lighting, water, drying cabinets, metal cabinets for chemicals and paint, and ventilated boxes. Painters frequently wash and rinse their brushes and containers of various kinds of paint, so all waste water from the



The painting studio is currently housed in the former grinding works. Note the antique paneling in the ceiling.



The present-day painting studio at Gullaskruf.



The kiln standing outside the painting studio at Kosta today.

studio needs to pass through the factory's water treatment plant. Since the kilns are some distance from the painting studio at present, glass needs to be transported between the two. This is done by means of trolleys, pushed by glass-painters through the corridors at Kosta.

Few old brick-clad glass-painting kilns remain in Glasriket today, and those that exist are most likely not entirely intact. In Johansfors there is a red-painted glass-painting building of wood. It still has its brick kilns and two square chimneys. In Pukeberg there are still two brick-clad kilns in what is now the glass-cutting studio. Rosdala, too, has a wooden structure from 1930 that was a glass-painting studio. There is also a separate brick-clad pantry where paint and chemicals were stored. The painting studio at Gullaskruv, a separate building within the glassworks compound, is

still there. It is a brick building clad with stucco from about 1927. The elder painting studios announce themselves through their chimneys. Tall windows that let in a lot of light are another characteristic feature.

Gold rooms

Glass painted with gold paint is extremely sensitive to dust. A single grain of dust will remain visible in the finished product. Therefore, in the 1990s Åfors built a small dedicated room for painting with gold in the glass-painting studio. Great care was taken to keep the space as dust-free as possible. Sandvik and Kosta, too, had special gold rooms. The room at Kosta has since been put to other uses. Since then, painting with gold takes place in the ordinary painting studio. The new paint is not as sensitive to dust as the old paint was.

Glass-painting in Glasriket today

For Charlotta Kjellander, thinking back to the hey-day of painted glass makes her a bit wistful. For many years what is now the Orrefors Kosta-Boda group employed glass-painters in great numbers. At the height of painted glass' popularity, painters worked in two shifts. She recalls painting the series, Tulipa, which was produced at Orrefors. *"Production of the series ended when Orrefors shut down*

in 2012. Oh, how we sat and painted Tulipa, year in and year out!"

In April 2020, four glass-painters remain at Kosta. There are a few painters at Målerås and Nybro, as well. At the same time, there is considerable interest in painted glass. Several of the younger glass designers – Åsa Jugnelius for one – use painted

Åsa Jugnelius on glass-painter Diana Valle

Diana came to Småland from Mexico in 1989, together with her husband, who was from Chile and had been granted political asylum here. Diana had never painted. She had studied International Relations at a university in Mexico City. In 1990 she persuaded Anders Lindblom's studio in Hovmantorp to take her on – because, she says, it seemed like such a nice place to work. She thought she would only be here a short time — "Like all refugees do." Today, 24 years later, she is one of four glass-painters at Kosta glassworks.

We met the first time, there in Kosta, in 2007. In those days there were about 20 painters, all women. Diana specialized in painting with gold. Thanks to her willingness to try new situations and her knowledge of the craft, she could handle my ideas about an expressive gold decor —with drops, splashes and smudges — on the Jackie collection.

In 2010, that part of the glass-painting studio was moved to Åfors glassworks. In the following years, Diana and four or five other painters painted about 20,000 pieces in the *Make Up* series each year. It was with very mixed feelings that Diana agreed to travel



The first 'lipstick' was part of the installation, *Vad fint du är i håret!*, 2005.

down to Slovenia, where part of Åfors production was to be moved. Her task was to train painters — all women, even there. But the first samples she sent to me after they had started weren't good. I couldn't approve them. Later, Diana was sent down to Turkey, to train painters there in how they should paint our patterns. Since then, part of our production is painted overseas.

Over the years, *Make Up* has been produced in a variety of colors and sizes. So far, 176,000 pieces in the series have been produced. They've brought in 30 million crowns.



Råttskål, created in the 1970s, was used as a model for bowls produced and painted at Kosta in conjunction with a one-woman exhibition of Ulrica Hydman-Vallien's work at Liljevalchs Art Gallery in Stockholm, Spring 2020.

glass in their work. Målerås glassworks even speaks of something of a renaissance for painted glass there. They combine different techniques for decorating glass, such as painting and cutting. In Summer 2020, Ulrica Hydman-Vallien had a one-man show at Liljevalchs Art Gallery in Stockholm. For the show, Kosta revived her painted series, *Råttskålar*, using the original as a model. A full-page advertisement in major Swedish retailer Åhlens' catalogue for Fall 2020 showcases Hydman-Vallien's painted decanters, which are painted at Kosta.

One can only hope that glass-painting will be among the crafts in Glasriket that live on and continue to gain renown.

This advertisement in Åhlen's catalogue in late 2020 demonstrates a continued interest in hand-painted glass. As so often before, those who paint Hydman-Vallien's work are still showcased today. May that be a sign that hand-painted glass has a future?

just HÖST 2020 nu

DESIGN

Glaskonstens sanna ansikte

Ulrica Hydman Vallien gjorde glaskonsten folkkär med sina omisskännliga ansikten, ormar och hjärtan. Konstnären Björn Kjelltoft gick på Konstfack när han målade hennes ansikten på pet-flaskor, precis som han satte Nike-swooshen på begagnade tröjor.

"Jag frågade om jag skulle uppfatta pet-flaskorna som en snyting eller en komplimang. Han sa att det var en komplimang, och berättade att han är uppvuxen med mina grejer omkring sig... Dessutom har han gjort det bra", sa Hydman Vallien och kontrade med att göra egna ansiktsflaskor i glas. Hon blev "nedringd av folk som vill köpa dem".

– Hon hade något att förmedla. Jag kan inte mycket om glaskonst, men att jag som finnisg Konstfack-student härmade henne blev en fantastisk blandning. För mig var hon aldrig glaskonstnär, hon var konstnär och människa, säger Björn Kjelltoft nästan två decennier senare.

Ulrica Hydman Vallien (1938–2018) kombinerade suveränt hantverk med lekfullhet. Under våren och sommaren har Liljevalchs i Stockholm visat utställningen *En paradissattack* med oljemålningar, teckningar, textilier, keramik och förstås hennes glaskonst. Och även Björn Kjelltofts pet-flaskor fick vara med, liksom Ulricas kopior av kopiorna. De senare säljs också i hyllningskollektionen *Let's celebrate Ulrica!* från Kosta Boda som finns på Åhlens.

BETALA ENKELT OCH SMIDIGT MED SWISH PÅ ÅHLENSE 7



Two pieces from Johansfors glassworks from the 1940s. The pitcher is blown, flared glass; the bowl is pressed glass. Both have been painted in the same pattern, despite the difference in technique. Photo: Maria Winsö, Kalmar läns museum.

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Bilagor

Annex 1. Modern-day glass-painters – and their signatures

Since the early 1980s, Swedish glass-painters have painted their initials on their work. On the many pieces designed by Ulrica Hydman-Vallien, the identification took the form of 'UHV' plus the painter's initials. Some earlier painters signed their work, as well.

It is interesting and, from a historical point of view, valuable to know whose the initials are. The work of the painter becomes less anonymous. The following list is the result of an attempt to collect as many glass-painters' names and initials as possible. Both current and past glass-painters have helped compile the list. Still, the list is not absolutely complete.

Initial	Namn och kort introduktion	Tjänsteår	Glasbruk
AA	Annette Ahlqvist		Kosta
AF	Ann-Charlotte Fransson		Lindbloms/Sandvik
AH	Anna Hirsch		Lindbloms
AH	Anette Hermansson		Åfors
AH, PH, AB	Ann Hanson (had to change signature; Åfors already had an AH)		Kosta
AK	Ann Sofie Karlsson		Sandvik/
AL	Anneli Lau		Kosta
AL	Anders Lindblom		Lindbloms
AL	Anna-Lena Ahlquist		SEA
AP	Alexander Petkovic		Kosta
AR	Ann Ramsey (née Rudman), married to designer and glass-blower Chris Ramsay, through 1998	1990–1993	Åfors
AZ	Anna Zabal		Åfors
BG	Britt Gustavsson		Lindbloms
BG	Björn Gröön (later Boode), grandson of Ivar Gröön, foreman of the glass-cutting studio at Åfors	1994–2001	Åfors
BP	Bernt Pettersson		Kosta
BR	Birgitta Rönn (married to a glass-blower)	1990–2020	Kosta
BS	Barbro Sevenius (mother of Åsa Sevenius)	1995–2005	Åfors
CA	Cecilia Almqvist (née Sjöström), granddaughter of Iris Karlsson (née Zenkert), who in turn was the daughter of Karl Zenkert		Åfors
CA	Christina Areskoug	1995–2004?	Åfors
CG	Susanne Sjödin (née Gustavsson; has used 'CG' her entire career)	1992–	Kosta/Sandvik/Lindbloms/SEA

Initial	Namn och kort introduktion	Tjänstear	Glasbruk
CH	Carolina Hultberg		Kosta
CK	Charlotta Kjellander (daughter of Erik Kjellander. Kjellanders: glass-blowers for many generations)	1984–	Kosta
CL	Christina Lund (painted art glass; also worked with etching and sandblasting)	1974–2012	Orrefors
CM	Cecilia Melkersson		Sandvik/
CN	Carina Niklasson		Åfors/Sandvik
CR	Carola Robért		Kosta
CS	Cathrine Schlich		Kosta
CS	Cecilia Sjöström (after 2006 Almqvist)		Åfors
DP	Danitz Popovic		Åfors
DP	Dragan Petkovic		Kosta
DS	Dagmar Schützendorff	1982–2013	Åfors
DT	Dorothea Wiberg		Åfors
DV	Diana Valle Lopez	1990–	Kosta, Lindbloms, Sandvik/Strömbergshyttan 1990–2005 Kosta 2005–2008 Åfors 2009–2013 Kosta från 2013
EF	Edgar Fagerlund		Hofmantorp
EH	Eva Holub (thorough 2001, thereafter Kraemer Karlsson)		Åfors
E-LA /EL	Eva-Lena Alfredsson (changed to EA when designer Erika Lagerbielke joined Kosta)	1981–2014	Kosta (Tidigare Lessebo/Lindbloms, Strömbergshyttan, Sandvik)
E-LJ	Eva-Lena Jonsson		Kosta
ES	Eva Stiernqvist		Åfors
GB	Gabriella Barizevic		Lindbloms
GE	Gunilla Engström (-Kleingeld) (married Kleingeld, a glass-blower)	1990–2013	Åfors
GH	Hugo Gelin		Gullaskruf
GM	Gerhard Moschna		Kosta
HR	Heinrich "Heintz" Richter	1955–1990	Orrefors
HS	Helén Svensson		Sandvik
HW	Heinrich Wollman	1914–1923	Orrefors
I-LS	Inga-Lill Stjärnborg		Kosta
IS	Inga Britt Sandberg		Lindbloms
IS	Inger Ström		Sandvik/

Initial	Namn och kort introduktion	Tjänsteår	Glasbruk
JP	Jenny Petersson	1995–2013	Åfors
JR	Joakim Ragnarsson		Kosta
KA	Kjerstin Ask		Kosta
KE	Katarina Ekström		SEA
KL	Kristina Lind		Lindbloms
KN	Kerstin Nilsson		Sandvik/Lindbloms
KT	Kerstin Torenstam		Åfors
KZ	Karina Zgrablic		Lindbloms
KZ	Karl Zenkert	1924–1936	Åfors
LD	Jenny Lind		Lindbloms/Kosta
LD	Lena Dahlman (née Petersson, married 2011)	2011–2013	Åfors
LE	Lena Engman (painter and designer)		SEA
L-GM	Lars Gösta Magnusson		Kosta
LK	Lena Kamras		Åfors
LL	Lucia Lau		Kosta
LP	Lena Petersson (after 2011 Dahlman), foreman at Åfors	1978–2011	Åfors
LP	Lena Petersson		Kosta
LS	Lena Svensson		Kosta
LT	Linda Tsomidou		Kosta
LZ	Lisa Zobal		Åfors
MB	Marie Björn		Sandvik
MB	Marie Björn Muse		Sandvik/
MG	Malin Gunnarsson		Sandvik/
MH	Magnus Hesslid		Kosta
MK	Monica Karlsson		Sandvik/Lindbloms
ML	Maria Lorenz (of a German glass-blower family; came to Kosta after Glimåkra glassworks shut down in 1969)	1997–2006 2016–	Kosta
MM	Maria Medin		Lindbloms
MN	Maria Nilsson		Sandvik
MS	Marie Ståhl		Kosta
MS	Malin Schlich		Kosta/SEA
MT	Mimmi Treschera		Kosta
MW	Marie Wilde		Lindbloms
NJ	Nikolina Josefsson		Kosta
NK, NE	Nikolina Kikson, (married Erlandsson)		Kosta

Initial	Namn och kort introduktion	Tjänstear	Glasbruk
NS	Nils Stuesson		Privat glasmålare
NYB	Lennart Nyblom		Pukeberg
PE	Paula Engström		Åfors
PL	Patric Lindstedt		Lindbloms
RS	Renate Stock (målare och formgivare)		SEA
SA	Sandra Ahlqvist		Kosta
SG	Sickan Gercke		Lindbloms
SG	Susanne Gustavsson (glass-painter, assisted designer Bertil Vallien)	1982–2010	Åfors
SK	Sara Koch		Kosta
ST	Sonja Theodorsson		Kosta
TD	Therese Dorj		Kosta
TK	Tina Kantomäki		Kosta
TN	Tuomo Nieminen		Kosta
UA	Ulrika Andersson		Lindbloms
UE	Ulla Ekström		Åfors och Boda
UT	Ulf Thor		Åfors
UW	Ulf Welanders		Lindbloms
WS	William Stenberg		Gullaskruf
YF	Yvonne Färdig		Sandvik/Lindbloms
ZP	Zoran Popovic		Åfors
ÅH	Åsa Hultquist		Kosta
ÅS	Åsa Sevenius (from 1992 Vallien; UHVs daughter-in-law)	1989–1992	Åfors
ÅT	Åsa Tingsdal		Åfors
ÅV	Åsa Vallien (née Sevenius, married Vallien in 1992)	1992–2006	Åfors
ÅÅ	Åsa Åberg		Sandvik/Lindbloms/Kosta
	Carl Johan Joelsson		Lindbloms
	Cecilia Pettersson		Sandvik
	Ann-Sofie Karlsson		Sandvik
	Maria Jacobsson		Sandvik
	Maria Hirsch		Sandvik/
	Kristina Heideman		Sandvik/
	Noemi Vega Jacome		Sandvik/
	Eva Jensen		Sandvik/
	Marie Karlsson		Sandvik/Lindbloms



Adress Box 104,
S-392 21 Kalmar

Telefon 0480-45 13 00

E-post info@kalmarlansmuseum.se
Webb kalmarlansmuseum.se

