

Legends of Glass - Lundstrom, Ahlgren and Schwoerer – Bullseye



Ahlgren, Schwoerer & Lundstrom – founders of Bullseye Glass in 1974



Ray Ahlgren – Fused Glass panel



Boyce Lundstrom vase



Daniel Schwoerer vase

**Daniel Schwoerer** “graduated from the University of Wisconsin (BS Civil Engineering; MS Engineering Mechanics) where he also worked in the art department as graduate assistant to Professor Harvey Littleton in 1968-69. He then moved to Portland, Oregon, where he set up a glassblowing studio and later founded Bullseye Glass Company with partners Ray Ahlgren and Boyce Lundstrom. He and Lundstrom co-wrote *Glass Fusing Book One*. In addition to his tasks as CEO of Bullseye, Schwoerer researches and writes technical articles on glass and investigates leading-edge issues in kilnforming.” (from the Bullseye website)

**Ray Ahlgren** “has been working with glass for over 40 years. He received a Bachelor's Degree in Ceramics from the University of Wisconsin and a Master's Degree in Fine Art in glass at the Art Institute of Chicago. Prior to starting Fireart Glass in 1980 he co- founded Bullseye Glass Company.” (from the Fireart Glass website)

**Boyce Lundstrom**, author and glass craftsman has written many books on glass. His book "Kiln Firing Glass, Glass Fusing Book One" is referred to by most fusers as the "bible" for fusing process and has been a top-selling book for over 30 years. Boyce started Bullseye Glass Company in 1974. He sold that company to his partner in 1985, and then created a glass school called Camp Colton, outside of Portland, Oregon.

His highest priority has been to create sustainable products using recycled glass which led to his creation of Oceanside Glasstile Company in Carlsbad, CA in 1992. After successfully establishing the largest production of mosaic and field tile made from recycled glass in the United States, Boyce moved on to create further lines of glass tile and other glass products made of recycled glass for Crossville Tile in Tennessee. Boyce continues to invent and create new glass processes, which are being presented in his new series of books.” (from Boyce Lundstrom’s website)

They are all glass legends and I like Ahlgren and Schwoerer’s work but I *love* Lundstrom’s glass, books, style and life philosophy. He writes simply and conversationally and is always challenging. His Raku glass books are a fabulous source of inspirational starting points.

In his own words from the Camp Colton website.

“I began working with glass in 1965, when I joined the new glass program established by Dr. Robert Fritz that year at San Jose State University in San Jose, California. At that time I was a Robert Fritz ceramics major, studying with one of the great ceramic glaze technicians of our time, Dr. Herbert Sanders. The close correlation between the calculating and making of ceramic glazes and the process of making glass is a natural one. So, as a potter studying glaze calculation, I found it natural to apply the technology to glass, and was soon drawn by the material.

In Dr. Fritz's program I learned to control all phases of the process of making finished blown objects. We built glass melting equipment, calculated and melted batch, formed the glass, and carried out all the cold working processes for finishing the annealed work.

This, my introduction to glass, has never been forgotten, and my desire since then has been to share as much with others interested in glass as Robert Fritz did with me.

After my graduation from San Jose State, in 1967, I operated a ceramics and glass studio in southern California for two years before my wife and I moved to Corvallis, Oregon, in late 1969, where I blew glass for galleries and craft fairs. While participating in craft fairs and shows, I met many other glass artists who had become infatuated with hot glass in the early years of the studio blowing movement in this country. We were all struggling to support our individual studios and families, while experimenting with new glasses and equipment.

Two of those artists were Ray Ahlgren and Dan Schwoerer, who were partners in a glass blowing studio in Portland, Oregon. It seemed that their experience and love for glass were similar to my own. Our experience in the glass world pointed to a need for more coloured sheet glass for the stained glass industry. Forming a partnership in 1974, we established Bullseye Glass Company, the first new glass manufacturer to produce opal sheet glass since 1900.

For the next four years the pressing demands of an infant company consumed all of my time. In 1978 I began designing independent stained glass panels, executed for me by more capable craftspersons. Although I completed a relatively large body of work, I was unsatisfied with the black lines and the cartoon effect created by the lead and copper foil. Even though I had control of the colours and texture of all the glass I used (I could make my own glass in the factory), I was not happy with the results.

I had met Kay Kinney during my years in southern California, and was aware of her struggles with fusing and laminating glass. In books I saw ancient Egyptian fusing, as well as fused work by contemporary artists Michael and Frances Higgins and Maurice Heaton. Since, at Bullseye, we produced mixed colours of glass daily, and had control of the formulas, it seemed a foregone conclusion that we could make sheet glass with similar coefficients of expansion.

The thought process went something like this: if sheet glasses had the same coefficient of expansion, they could be cut into shapes and fused together and there would be no need for all those cartoon lines. So, I started experimenting in 1979 or 1980--I don't know exactly when because the process was slow at first, fraught with many failures and just a few successes. If there was one memorable breakthrough, it was the application of the method of testing for stress with a polarimeter (from glass blowing) to glasses fused to a clear sheet glass with a constant coefficient of expansion.

When making sheet glass it is not important to have a constant coefficient of expansion among all the glasses. Single colours can all be different and mixed colours only have to be within one or two coefficient points of one another. In glass blowing it is not uncommon to use glasses together that vary in coefficient of expansion by four or five points, because the casing process holds the glass together. But when fusing glass flat, the glasses must be very close in coefficients. Establishing a clear glass as a constant, and then formulating the melt for all colours to fit that constant, made the contemporary glass fusing movement possible.

The ability to fuse glass, by taking it through the complete process of heating, holding and annealing, then checking the finished results with an accurate test, really stimulated my dreams of unlimited possibilities. I saw kiln fired glass as the wave of the future, providing freedom for all those who would like to be freed of the lead lines! Tiles, windows, bowls, sculptures, and building facades could all be made with fused sheet glass.

My enthusiasm for fusing demanded endless experimentation and my endeavours soon caught the attention of a number of glass artists, who became, along with me, pioneers of a sort. Our work, our workshop, and the push to spread the word about glass fusing somehow became known as the “Fusing Ranch”.

By 1981 I became adamant about producing glass for the fusing market at Bullseye Glass. My remaining partner, Dan Schwoerer, supported me in my one-man campaign to make fusing available to everyone. During the next few years we succeeded in making available a line of fusing compatible glasses. By 1983 we were teaching fusing in diverse parts of the world, establishing a line of products, besides glass, that fusers needed for their work, working with kiln manufacturers to get kilns designed for glass on the market, and writing Glass Fusing Book One.

The market was slow to move toward my vision for the fusing movement, and all that energy took its toll in a company whose focus remained the production of quality hand rolled sheet glass. In 1985, at the same time that Camp Colton came into our lives, I sold my shares of Bullseye Glass Company to Dan, who keeps the company on track, making the best sheet glass they can make, leaving me free to concentrate on those questions that concern glass fusing.

There followed a decade during which The Glass Program at Camp Colton, while only one of our endeavours at camp, kept me challenged to find out if all the things my students could imagine could be done with glass! A continuing stream of students from all over the world joined us for 13-day residential classes. They were from diverse backgrounds and had vastly differing degrees of experience with glass—in many cases none! However, it is difficult to imagine one of them who didn't have something new to bring to the understanding of what can be done with glass.

During this same period, I wrote two more volumes on warm glass working, *Advanced Fusing Techniques*, and *Glass Casting and Moldmaking*.

As students became teachers and the word spread, I saw less need to continue with the Glass Program, and was ready for something new. My next endeavour was a commercial one: manufacture of stylish glass tiles for architectural use made from recycled bottle glass. This once again involved a bit of pioneering, since it required educating a whole industry to accept glass as an acceptable tile material.

Around the time Oceanside Glasstile became steady on its feet, I began giving part of my time to a new tile company, where my designs could be expressed in clay again. I now spend all of my time nurturing that new company, and have begun to demonstrate the possibilities of combining glass, ceramic, and metal in single tile installations.

As a sideline to my current endeavour I am working on glass products that will find a place in the System 96 group of products for fusers, which brings me back to my roots, and seeing through the eyes of the studio craftsman.”



Two inspirational books – thank you, Boyce!!