



CodaBow International, Ltd.

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Artful Innovation

Left to right: CodaBow's Jeff Van Fossen with bow technicians

"The most *beautiful experience* we can have is the *mysterious*—the *fundamental emotion* which stands at the *cradle of true art* and *true science*."

—Albert Einstein, *Living Philosophies*, 1931

CodaBow International, Ltd. is housed in a small building that is tucked away at the end of a quiet street in Winona, Minn. From the outside, the building appears nondescript—there is nothing striking enough to give pause to passersby. Inside, though, a small team of scientists, artists, and craftsmen work diligently—combining time-honored traditions with state-of-the-art science—to create a product that makes a big impact on musicians across the globe. What happens at CodaBow may be a mystery to many residents in the 7 Rivers Region, but musicians who specialize in playing the violin, viola, cello, and bass recognize CodaBow as one of the world's premier bow companies.

CodaBow was founded in 1993 by Stan Prosen and Jeff Van Fossen—two men on different paths, until a chance meeting and a shared interest brought them together.

By the early 1990s, Stan Prosen's career in the field of composites had already spanned several decades, beginning just after World War II when his government lab specialized in the development and commercialization of carbon fiber. Later, after the government released the technology, carbon fiber began to be integrated into the production of sporting equipment: fishing rods, golf club shafts, tennis racquets, and more. An innovator at heart, Prosen became interested in the concept of using graphite fiber to improve the performance of bows for stringed instruments.

Years later, after having relocated to Winona to work with the composites company, Fiberite—and to help establish the Winona State University Composites Engineering Program—Prosen met someone who shared his

interest in the possible musical applications of carbon fiber technology. Jeff Van Fossen, a recent Princeton University graduate with degrees in mechanical and aerospace engineering, agreed that graphite fiber could be used to make premier performance bows. "Though I had wonderful opportunities during my early career to work on fascinating design projects (including Formula 1 race cars, spacecraft, and orthopedic devices), none intrigued or inspired me so much as Stan's pursuit of high-performance bows for stringed instruments. It was truly a pioneering concept," says Van Fossen.

Few scientists might be bold enough to attempt to break into the highly traditional world of bowmaking, but Prosen and Van Fossen immediately involved the industry's most respected resources, including musicians, orchestras, professional teachers, and traditional bowmakers like Roger Zabinski. Zabinski has been handcrafting fine pernambuco (traditional wood) bows in the French tradition for over 30 years, and his bows have been sought after by some of the world's premier musicians. In fact, a quartet of Zabinski's bows is in permanent residence at the Smithsonian's musical instrument collection.

And it's this combination of art and science—tradition with a twist—that has made CodaBow successful. "Our designs are crafted using our own proprietary technology," says

Van Fossen. "The process is an innovative series of sophisticated steps that allows us to create each shaft systematically from the inside. Like the rings on a tree, a CodaBow is built from the inside out so that each layer contributes to the overall performance."

The process begins with the creation of the bow's "acoustic core," a highly-engineered architectural composite. Then craftsmen continue, one layer at a time, weaving and blending specialty fibers that will eventually define the "sound" and "feel" each bow shaft. "The hand of a professional string player is a highly refined scientific instrument capable of sensing weight variations of 0.1 gm—the weight of a postage stamp," says Van Fossen. "Because we serve some of the most talented players in the world, every aspect of our bows must embody uncompromising quality and precision."

CodaBow craftsmen complete the production process using only the highest quality materials. The completed shaft is adorned with sterling silver winding and a Moroccan goatskin grip. The shaft is then matched to a "frog" (the piece that holds and tightens the hairs of the bow) that has been

custom-made by artisans in Roettenbach (a small village in Germany known worldwide for its long history of producing some of the finest stringed instruments). Each frog is handmade and inlaid with a CodaBow emblem of 24K gold.

Finally, the bow is ready to be "haired," the delicate process whereby a select number of hairs are installed on the bow. The best bows, including the CodaBow collection, use horsehair from Mongolian stallions, which costs up to \$500.00 per pound. The hair is hand-combed and sorted before the highest quality hairs are installed on the bow.

Each stage of production represents a critical element in the construction of a perfect bow, says Van Fossen, so inspection is an important part of the process. "Using both human methods and

sophisticated scientific methods, we meticulously check every bow at each stage of its creation. Whether the bow is destined for the hand of one of CodaBow's celebrity clients or for the hand of a high school student serious about playing, each bow is crafted with the same care that all fine instruments deserve."

The result is an exquisite collection of professional bows



The Diamond GX violin bow from CodaBow's *Diamond Collection* for professionals.

at an affordable price. While professionals typically pay in excess of \$3,000 for a handmade pernambuco violin bow, a professional violin bow from CodaBow's *Diamond Collection* retails for \$775.

Today, CodaBow has achieved success through the marriage of scientific innovation and a healthy respect for tradition. But according to Van Fossen, the company would not be where it is today without the support of the company's "extended family," a community of teachers, orchestras, musicians, and people from the industry who've been supportive through the years.

While professionals on every major stage from Hong Kong to New York can already testify to the performance excellence of the CodaBow, Van Fossen believes the company is just getting started. "Since the beginning, our designs have been unrivalled in the industry. But we don't want to rest there. As the pioneers in our industry, our team feels a responsibility and a passion for continually raising the standard."