

VERMONT HERITAGE

Covered Bridge Brigade

When your town's historic covered bridge breaks, who can be called in to fix it?

COVERED BRIDGES ARE a strong and compelling component of Vermont's allure and rich heritage. They have been seen in many well-known paintings; they have appeared in ads extolling travel and the Vermont lifestyle and have been the silent and enduring subjects of many treasured photographs taken over the years. For generations, they have been landmarks and gathering places for enthusiastic swimmers and trout fishermen alike (although they may sometimes be at odds with each other for those two uses). They have been the dark, wooden tunnels of the horse-and-buggy days, where young lovers could steal a quick kiss before emerging. Vermont's covered bridges stand strong on their foundations today as a joy for the preservationist to behold, and an exasperation for big rig drivers of GPS persuasion who stray off the beaten path.

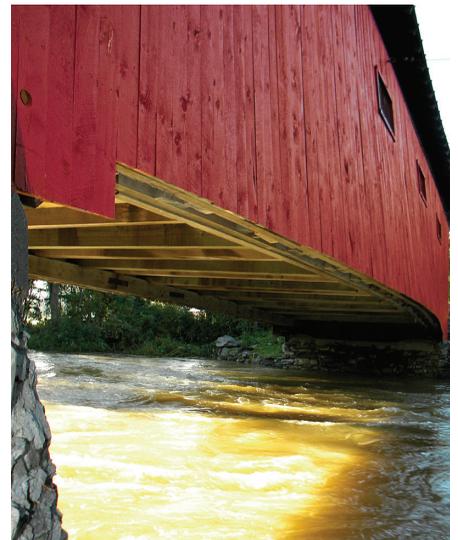
Much like the tally of Vermont's active dairy farms, the number of covered bridges in the Green Mountains has sadly dwindled through the years. Depending on whose information one may believe in, it can be said that nearly 600 covered bridges existed to serve the traveling public in Vermont at the dawn of the 1900s. That number was decimated—by more than half—by the disastrous flood in 1927. Additionally, the ravages of time, fire, and expedient repair by means of replacement have further reduced it to its current standing: slightly more than 100.

Among the survivors—each known today for some special quality, unique aspect of construction, remarkable location, or some small quirk of fate that has led to its ultimate survival—are the Green River Bridge, which has a post office drop box inside it; the



On January 25, 2012, the three-man crew from Wright Construction was hard at work, using a raft to serve as a temporary platform from which to hang scaffolding under the bridge. The damage inflicted by Tropical Storm Irene the previous August was apparent (below) in the outward bow in the downstream side of the bridge.

state's highest, the Halpin Bridge, at 46 feet above the stream it spans; and the Lincoln Bridge, which is the only known all-wood-construction example of the Pratt-arch truss bridge in America. But perhaps the most iconic is the little red covered bridge that crosses the Battenkill River in the village of West Arlington. Close by it, looking prim and proper, its steeple peaked like an elegantly folded, starched white dinner napkin sits a quaint country church. Joined to it as if in close fellowship is a Grange hall, and standing demurely behind the church on piers as if on tiptoe, awaiting invitation to neighborly social use, is the Grange's dance pavilion on the village green.





By January 30, parts of the bridge siding had been removed to gain access to the trusses and chords of the bridge. Plastic was used to cover scaffolding and provide protection from the weather as work progressed both under and on the upstream side of the bridge.



Project Superintendent Rich Butrimas points out one of the new oak pegs, or trunnels (also known as tree nails), used as fasteners. This is the traditional methodology of the covered bridge builder and used in securing the new section of the lowermost chord that has been grafted in.

Just a short, pleasurable stroll down the road from the structures stands a charming country inn, a house that was once home to Norman Rockwell.

The covered bridge was constructed in 1852, using the Town lattice truss design patented in 1820 by Ithiel Town (the patent was updated in 1835 to include four instead of the original two chords, or horizontal beams, per side). Town's design can be found in the construction of the majority of Vermont's covered bridges, due not only to his tendency to travel far afield from his Connecticut birthplace in the manner

of Ethan Allen, but also perhaps due to his knack for sales and the ability to promote his trade as a bridge engineer in his peregrinations (he sold rights for his patents to the various bridge builders in communities at the rate of one dollar per foot of the planned bridge's length).

On August 28, 2011, the waters of the Battenkill River, swollen by runoff from Tropical Storm Irene, reached a level perhaps unprecedented since the time of Ithiel Town's bread-and-butter days; the once-placid river buffeted the lowermost chords of the bridge just

below its floor. Onlookers who had gathered on the north side of the bridge, fearing that it might be lost, watched in horror as the trunk of a large, storm-ravaged tree suddenly appeared, being carried swiftly downstream like a dark, lethal torpedo. Shown in a video taken on the spot and posted on YouTube the next day, it scored a direct hit on the middle of the bridge, breaking two lower chords and knocking the floor askew before it passed by underneath. The impact bowed the downstream side of the bridge outward nearly a foot, rendering the bridge unusable.

The bridge had already been closed to traffic as a precaution when the waters had risen dangerously high, and it remained closed while the town of Arlington considered repair proposals from three contracting firms, finally deciding on the proposal offered by Wright Construction, a company well experienced in all types of construction and based in Mount Holly. Of the three, "Wright was more in line with what we wanted to do with the bridge," says Arlington select board chair Keith Squires. "Plus, they had worked on it before...and, they were the lowest bidder."

Before Wright's crew got to work, as its senior project manager, Joe Poston recalls, "We assisted the town crew in getting the downstream sweep [bow] out and setting floor beam bearings back on the trusses." Besides the broken upstream lower (D span) chords, the bridge "had been knocked slightly out of place on its abutments," says Joe. "We weren't sure if it was due to Irene but, it had to go back upstream."

Wright's own crew then took over, beginning their work the last full week of January 2012. But rather than a swarm of workers aided by a huge crane, it consisted for the most part of just three men—Rich Butrimas, Wright's project superintendent, foreman Miguel Salo, and carpenter Justin Ackley—who worked chiefly with simple hand tools. And, of all things, the first part of the construction involved...building a raft.

Once the raft was neatly swung into position under the bridge to provide a working, albeit floating, surface, scaffolding was slung from the bridge's 160-year-old underpinnings to make a temporary bridge on which the workmen could stand. Despite the coldest weather Mother Nature could dish out, Rich, Miguel, and Justin worked from 7:00



Almost all of the repair work performed on site was done by just these three men. From left to right are Project Superintendent Rich Butrimas, foreman Miguel Salo, and carpenter Justin Ackley posing on February 16, 2012 with the storm-damaged portion of the lower bridge chord they had replaced. The bridge was opened to traffic not long after this photo was taken.



With new siding (that had been pre-painted in Wright Construction's shop) installed, the crew was busy taking down scaffolding when this photo was taken the day before the bridge opened to traffic.

a.m. until 3:00 p.m. daily, all the while commuting from Castleton, Chester, and Rutland, respectively.

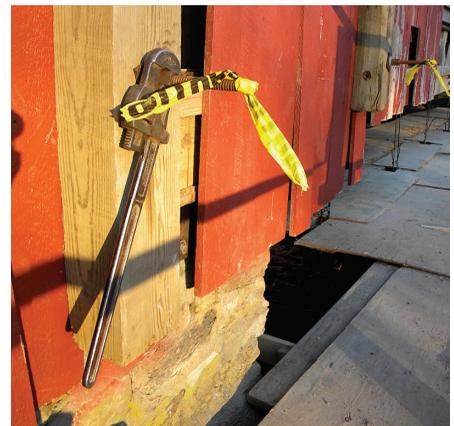
By mid-February, the two broken sections of the D span had been removed, their replacements grafted into place and secured with new oak trunnels, and the bridge had been pulled gently back into proper place on its abutments with the use of a come-along and chains. With the know-how of covered bridge chiropractors of sorts who fix one problem at a time, the crew gingerly passed a long, threaded steel rod through the structure's south end. The rod's downstream end was secured to the bridge's exterior and a steel plate secured with a threaded nut on the upstream side's exterior. A large wrench and muscle power to carefully turn that nut with it then slowly brought the bridge back into proper alignment and true shape, a process that took eight days. "My job was to realign the bridge onto its bearings," explains Rich, "from where the shock of impact pulled the floor."

A roughshod method that the uninitiated repairman might have used "like what some guys did years ago," Rich points out, "might have meant hitching the bridge up to a tree on the shore and then just yanking the bridge upstream; you can't do that. The bridge got hit in the middle...so, there's some memory in

those chords. You can't twist a bridge back onto its bearings."

Inside the bridge, a carpentry shop had been set up; saws powered by a portable generator buzzed away as wood was cut for final details of the repair. New siding, the finishing touch, had been pre-cut and pre-stained in Wright Construction's shops and was installed by February 15, the date the crew began to dismantle the scaffolding. On the very next day, February 16, the job was finished and West Arlington's historic covered bridge was open to traffic once more.

Rich and his crew were already off to another covered bridge repair job—dismantling one span of the storm-damaged covered bridge at Taftsville, advance work for its ultimate restoration. And, two months or so later, Wright's men were at work on repairs to the Gifford covered bridge in Randolph. How many covered bridge jobs has Wright's talented workmen fixed? "We've done work on more than 30 of them in 28 years," answers Joe. "What we did was typical," he states nonchalantly, with the insouciance of someone who deals with all types of construction and thus expects the unexpected every day. "It was a pretty straightforward job." 🦧



Before the new siding went on, a king-size wrench was used to slowly turn a nut on a threaded rod that ran through the bridge and pull it gently back into proper alignment. The entire process took eight days.

Just the facts

For information on Vermont's covered bridges, *Vermont Magazine* recommends visiting the website of:

The Vermont Covered Bridge Society

P.O. Box 97
Jeffersonville, VT 05464
Visit vermontbridges.com.

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