THE HISTORY OF
45 Mill Street
WILMINGTON, VERMONT

BY MARTHA AND RANDALL SCHOONMAKER
THE HISTORY OF

45 Mill Street
This book is dedicated to all those – past and present – who have worked at 45 Mill Street.
CONTENTS

Preface vi

The Train Comes To Town 10
The First Factories 16
“The Plywood” 38
Buddy Can You Spare A Dime? 58
The Not-So-Secret Formula 64
An Ending And A Beginning 88

Closing Comments 106
Timeline 108
Building Footprints 110
Owner History 111
Acknowledgements 113
In 1996, the Deerfield Valley Transit Association (DVTA), nicknamed the MOOver, was established to provide public transportation for southern Vermont’s Deerfield Valley. The company rented offices in West Dover and bounced around its garage, drivers, and mechanics to separate sites in West Dover and Wilmington.

Four scoping studies and lots of paperwork later, the DVTA bought a 9.5-acre site on 45 Mill Street in Wilmington from Bob Grinold, from whom they had rented a one-bay garage on the site since 2000. Eighty-two thousand square feet of falling down, hazard-ridden space had been hodgepodge together for 88 years by a number of previous owners for different uses. The DVTA spent three years trying to see what purposes (including public transit) the structure could serve and how to raise funds to meet those needs. But the building decayed beyond repair by 2006.

The company applied for an earmark and permits to build a new facility in 2008. The historical permit process required a sign-off by the Historical Society of Wilmington, and their sign-off required the DVTA to document the history of the facility.

We offered to do some research and then produce a scrapbook, to which the Historical Society agreed.
A scrapbook would not do the site’s history justice. We became hooked on the written part of the task and decided to produce a book rather than a scrapbook.

The Historical Society of Wilmington, Pettee Memorial Library, and author Brian Donelson (The Coming of the Train, Volumes I and II) contributed huge files of pictures, old news clippings, and resources. Along the way we met and interviewed descendants of those who worked at the site and others who provided anecdotes or suggestions for further research. Of invaluable help were the Society’s Julie Moore; former mill workers George Davis and Jim Raymo; Deborah and Jay Canedy whose father Jean was plant manager in the 1980’s; Gary Lackey who worked at the site for many years; and Blanche Mills who worked in the factory with her father in the 1940’s.

It is odd to document something you have to destroy. Few people today know of the fortunes made and lost, the lives changed, the pride generated and the work done by hundreds of people at 45 Mill Street. This is their story.

Martha and Randall Schoonmaker, May 2012
The Train Comes To Town
1891 – 1914
Before the train, the Deerfield Valley was isolated and detached. It took an entire day to make a trip to Brattleboro or Bennington to buy products not available locally. The area was colonial, not industrial. Its citizens relied on poor agricultural conditions to make a living. Several tried to start their own businesses using local resources—especially lumber. There was more than enough timber to encourage profitable logging trades but there was no place for the lumber to go. For this and a number of other reasons, nothing was successful. Many families gave up and left the area.

In 1885 the Hoosac Tunnel & Wilmington Railroad, fondly known as the “Hoot, Toot & Whistle,” was extended to Readsboro from North Adams, Massachusetts. By 1891 it was

Did you ever hear a music Sweeter than the one that thrills
As it floats along the Deerfield,
As it echoes o’er the hills
How we watch that little engine
As it stalks across the plain;
Was there ever music sweeter
Was there ever sight completer
Than the coming of the train?

Ho! Ye sturdy care-worn farmers;
Ye who toil the long day through
In your quiet fields and meadows
Patient as your hearts are true
Tell me as ye pause and listen
As ye sow and reap the grain
Heard ye ever music sweeter
Saw ye ever sight completer
Than the coming of the train?

— E.A. Fitch, Wilmington
extended to Wilmington. At first, this simply meant the valley had exports. Profits were made by sending lumber south to mills and factories.

Then the Deerfield Valley began its own industrial growth, creating new businesses like the Wilmington Grain and Lumber Company located on North Main Street. In 1904 the Choate Manufacturing Company built its furniture factory, known today as the Old Red Mill. Other notables included the Readsboro mills and the Mountain Mills pulp mills.

In less than 30 years, the valley transformed into a modernized industrial district. People could travel and access goods outside of the valley. Residents depended on the railroad and the products it imported and exported from the region. More opportunities followed, including new products fed by the region’s timber supply.

“Vermont is often thought of as the epitome of rural New England — pastoral, pure, and primeval. But Vermont also has its place in the history of American industrialization. Vermont led the nation in the development of the kind of precision tool making that made the technological revolution possible. Factories dotted along the state’s waterways and rail lines supplied the rest of the country with manufactured goods from agricultural equipment to washboards. The Deerfield Valley was home to several manufacturing facilities — most of which took advantage of the area’s natural abundance of lumber. Few of the valley’s old factories still stand; most succumbed to fire or fell into disuse and disrepair and were eventually demolished.”

— Mike Eldred, Cracker Barrel
The First Factories
1915 – 1941
In 1889, Captain Henry B. Smith established the Ludington Woodenware Company in Ludington, Michigan. The factory produced clothespins, wood bowls, dishes, and butter molds. Ludington’s products were displayed at the 1893 World’s Columbian Exposition in Chicago — the third World’s Fair.

Due to a scarcity of hardwood in Michigan, the company moved to Mill Street in Wilmington on land adjacent to the railroad. Eyeing the valley’s hardwood supply, Ludington leased the site for one year before buying it in 1914 from the Deerfield Lumber Corporation for $1,500 ($33,000 today). Smith built the first of several factories on the site.

The Ludington Company often sent managers to Wilmington to oversee operations at their eastern plant. One of them was Clarence Budington Kelland, a writer and a principle stockholder in the company, whose wife was one of Smith’s daughters. He bought a Victorian house located at the corner of South Main Street and Beaver Street, which is now Wilmington’s municipal parking lot.

Left: Looking northwest at the building site, with Haystack Mountain in the background. The large white house visible behind the trees later became housing for mill employees.

Below left: Ludington manager Clarence Budington Kelland, author of Scattergood Baines.

Below right: The view looking west as construction on the factory’s main block progressed.
Kelland’s most famous novel was Scattergood Baines, a humorous tale of a clever entrepreneur who arrives in a New England village, makes good, and becomes part of the fabric of the community by dispensing Yankee wisdom from across the counter of his store. Scattergood Baines was so popular that it became the basis of a radio show and, in 1941, the first of three movies named after him.
Below: The large smokestack is in place. Two smaller smokestacks were attached to steam boilers for additional power. These can be seen in operation on page 26. A rail spur extended from the train station to the factory. Rail service was key to Ludington’s early success. A second rail spur from Mountain Mills delivered logs to the factory’s log yard, while the pictured spur sent boxcars of finished product out. Each rail line was a different gauge, necessitating the two spurs.

1915–1941: The First Factories

LUDINGTON WOODENWARE COMPANY
ORIGINAL FACTORY FLOOR PLAN
When it opened in June 1915, the 57,670 square-foot Ludington Factory employed 68 women and 60 men. Later, it had 160 employees, which was 7% of Wilmington’s population at the time. The company added a footbridge across the Deerfield River to access employee housing.

Local beech, maple, and birch were made into wooden dishes, bowls, spindles, butter molds, mop and broom handles. Ten dish machines made 350,000 plates daily and twelve clothespin machines made 125,000 pins per day – later, 604,800 a day. The factory shipped five boxcar loads of goods each week with a monthly gross of about $15,000 ($314,000 today).

A sawmill at the plant cut to size the 15,000 feet of logs needed for each day’s production. Three boilers supplied heat and steam for various operations, and an onsite machine shop produced the tools and parts needed to keep the machines operating. A giant 450-horsepower Corliss steam engine ran the factory’s machinery through a system of driveshafts, belts, and pulleys known as a lineshaft.

The Ludington Factory also produced plywood trays. The trays were used in the delivery and sale of butter, lard, and other commodities at grocery stores. Large yarn bobbins, used in woolen mills, were also produced at the plant.

604,800 Clothespins A Day
Smoke coming from all three steam boilers. An empty freight car is seen at left. Note the huge piles of logs that fed the factory.

Opposite: The Ludington Factory in operation. Logs were sawn in the open shed at far left, and some of the sawn wood was conveyed to the second floor via the ramp. At right near the bottom of the smokestack is wood leaving the building via another conveyor.

Left: The third floor of the main block.

Below: The Ludington Factory in operation. Logs were sawn in the open shed at far left, and some of the sawn wood was conveyed to the second floor via the ramp. At right near the bottom of the smokestack is wood leaving the building via another conveyor.
Fire & Flood

On Thursday, November 28, 1915, two watchmen were eating dinner when one of them stepped outside. When he returned, he found a fire in the boiler room. Flames quickly spread into the factory through a conveyor that moved waste from the mill to the boiler room. The two men sounded the alarm. Firemen arrived, but the flammable material was too consumed. In two hours everything had burned. Firefighters managed to save the Corliss engine, the veneer machines, and three large boilers. All of the building’s other machinery and the finished stock were destroyed. Between $140,000–175,000 was lost. One news article said it was the greatest loss the town had sustained up to that time.
After some speculation, the factory was rebuilt and went back into production in May 1916 – less than six months after the fire. The new 47,000 square-foot structure had a main three-story block, a store, a warehouse, and a boiler and engine house. The new wood-drying buildings were built of brick. The lower floor of the main block had a shafting room and packing rooms. The second floor had clothespin machines, a sawmill, and veneer machines. The third floor had dish machines, spindle lathes, wooden bowl machines, and wooden kitchen utensil machines.
A series of difficulties arose. The insurance did not cover the entire loss. The company was forced to restructure in January 1918 for financial reasons. The clothespin production unit was moved to a company-owned mill in Maine. In April, Smith passed away.

In 1923 the pulp mill at Mountain Mills closed when the Harriman Dam was built on the Deerfield River, and water covered the factory and town sites. This created the Harriman Reservoir, known today as Lake Whitingham. When the dam was built, a section of railroad tracks was relocated to the west side of the Deerfield River, and a trestle was built across it to connect to Wilmington.

Below: Logs are piled in the yard randomly before processing; later, a log pond was built there. The two-story building at the far right housed many functions over the years and collapsed in the spring of 2008.
Due to a shortage of local timber, the Ludington Factory also closed. In 1927 the mill was sold to the Deerfield Valley Plywood Company from Greenfield, Massachusetts. The deed mentions that the factory had a steam engine, boiler, electric motors, electric light fixtures, an electric generator, a heating plant, a sprinkler system, a log carrier, mill conveyors, a machine shop, a sawmill and planer, and a dry kiln. During their ownership, the Deerfield Valley Plywood Company sold part of the site to the Deerfield Valley Grain Company. They deeded rights of way to the Hoot, Toot & Whistle Railroad and the newly-formed New England Power Company. The company built several additions to the Ludington Factory including a two-story structure.
In the spring, melting snow caused the monumental flood of 1927. The rail trestle at Mountain Mills was destroyed. Water reached well above street level in the village. The railroad bridge was replaced two years later and the Hoot, Toot & Whistle returned to town.

But in 1938 a hurricane swept through the valley. Among the damage was the destruction of the Mountain Mills rail trestle. It was beyond repair, and Wilmington never again saw rail service. The Deerfield Valley Plywood Company ran into financial difficulty and the factory’s production slowed dramatically.
“The Plywood”
1941 – 1963
Big Help from a Small Valley

The factory withstood the last stages of the Great Depression but in 1941 it was sold by Deerfield Valley Plywood Company to the New England Box Company, also of Greenfield. This company produced plywood boxes, the majority of which were bread and banana containers designed for commercial use. The breadboxes were large enough to hold about a dozen loaves for delivery. They were relatively light, and could be stacked without crushing their contents, similar to the plastic trays that are still used today for delivery of bakery products.

Shortly after New England Box bought the factory, the United States entered World War II and the company’s product line quickly changed to meet wartime needs. During the war, the company designed and manufactured storage boxes for military equipment, boxes for shipping precision manufactured parts such as gun barrels, armament and ordinance boxes, and military footlockers.

Hardwood logs used to produce boxes were harvested in nearby forests. The logging camps were, by necessity, active during the colder months. Provisions were hauled into the remote camps by tractor until the ground froze and trucks could safely make the journey. The logs were hauled down to the road by tractor and sled, loaded onto trucks, and delivered to the factory in Wilmington.

During the war, the factory’s production capacity challenged the area’s logging supply. Skilled teamsters and loggers were in short supply as men entered the armed services. Women of all ages worked throughout the factory to keep production levels high.

Most of the wartime images and captions seen on pages 38–53 came from a 1944 New England Box Company newsletter provided by Blanche Mills. Blanche and her father, Howard Farrington, worked in the mill for many years.

Above: A brochure produced during WWII shows a variety of boxes served many uses during the war (left), and “Libyan the Riveter” works to support the war effort at New England Box Company (right).

Left: View from across the river looking south toward the New England Box Company Factory, known during the war as “Mill Y”.

“Presents for Hitler” being wrapped in “New England” boxes — Here is the final step in a big plant making bombs that are devastating Hitler’s homeland. As they come off the assembly line there are “New England” boxes ready to carry them by rail, sea and air to our fighting fronts all over the world.

Women of all ages worked throughout the factory to keep production levels high.
This Tunisian donkey is hauling wartime material in a box made at Mill a half a world away.

OPPOSITE  |  New England Box Company boxes supplied troops on many WW II fronts. Shown (clockwise from top left) are New Georgia, Ireland, Australia, and the Russell Islands.
Making Plywood Boxes

Key insights for the plywood box production process were provided by East Dover’s Jim Raymo during a walking tour of the factory in 2009. Jim worked at the factory with his father for several years in the late 1950’s and early 1960’s as a relief operator, filling in anywhere on the production line where needed. As a result, he developed a thorough understanding of the entire process and provided details for the diagrams of the box production processes that follow on pages 46–52. Workers like Raymo referred to the factory as “The Plywood”.

To produce plywood, hardwood logs were soaked in a pond outside the mill to raise their moisture content. Then they were cut to length in the factory’s saw mill. After spending 24 hours steaming in a kiln they were mounted on a large lathe which shaved off a thin, continuous sheet of veneer. To manufacture veneer, each of the two large lathes required five workers—a machine operator and four people who stacked the sheets coming off the lathe for drying. Layers of veneer were glued together and pressed overnight in a drying room to produce a sheet of plywood. In another area of the factory, the plywood was cut into various component parts for each type of box.

The 1941 Sanborn Map on page 45 shows that a one-story addition was added to the south gable wall of the main block and a shallow one-story structure was added along the west wall of the block which housed the second lathe.

The three-story woodworking building: plywood was made on the first floor, cut to size on the second floor, and boxes were assembled on the third floor.

The two-story cleating building: cleats are an extra piece of wood around the edges of some boxes to make them sturdier.

The wirebound department occupied two floors near the offices and the shipping dock. These boxes had wire reinforcements along the sides and edges. They could be collapsed for shipping, then re-assembled on-site by the end user.
Logs were peeled into long sheets of veneer. Bark chips went into the chipper pit and were blown into the furnace. Leftover “cores” of logs too small to peel were trucked to the boiler for fuel.

Logs were steamed overnight to soften for the lathe.

Logs were soaked to soften them for peeling.

Logs were cut to length.

A large knife cut veneer to size.

50-foot long veneer sheets dried for 15–20 minutes.

Machines glued 4–6 sheets of veneer together.

Veneer sheets were pressed after gluing.

The diagrams on the following pages show the production process that New England Box used in making its plywood boxes. The photos are keyed with the corresponding numbers in the diagrams.

Operating the Merrit Lathe are (foreground, left to right) Freeman Becker (matcher), Wallace Bly (breaker), and Ray Lumina (lathet operator). In back are Sam Boyd (wet clipper operator) and Harold Lusselle (blocker).
1941–1963: "The Plywood"

**WOODWORKING BUILDING / SECOND FLOOR — Sizing Plywood for Box Construction**

**4-5 Panel & Rip Saws**
Cut plywood sheets to size

Albert Brissette operating the panel saw on the second floor and Edward Davidson behind him as off-bearer from the rip saw.

**WOODWORKING BUILDING / THIRD FLOOR — Assembling Boxes**

**Riveting & Box Assembly**
The production line included a series of riveting machines and drill presses connected by conveyors. This area was also used for storage.

Left: The sander is run by Leola Parsons (left) and Alice Rogers as off-bearer and inspector. Right: Boxes being made for Pratt & Whitney (an aviation and war materials plant in Hartford, CT). Here’s (left to right) Glenna Shelha and Ida Reynolds riveting and Hazel Cole and Mabel Wheeler assembling.
New England Box Company

Cleating Department

First Floor

- Planer
- Chop Saw (cuts cleats to length)
- 3-4 Cleat Machines
- Miscellaneous Small Machines
- Moulder (made sides of boxes)
- Edgar

Working in the cleat department are Muriel Shippee (off-bearer), Earl Hathburn (foreman and railroad saw operator), and Joe Coleman (off-bearer to double surfacer).

Second Floor

- Nailing Room (three machines nailed cleats to the wood)
- Ramp to Floor Room & Storage Area

Cleat nailing is done by Eliza Look (seat placer) and Ray Davidson (operator), and in background, Gladys and Thelma Thomas (operator and placer).

First Floor

- Ramp to Paint Room & Storage Area

From the first floor:

- Blanche Mills has a cleated bread box made in part by her father, Howard Farrington, who operated one of the Merrit Lathes.

- Jim Raymo has kept a cleated foot locker made at the factory during World War II.

- 1941-1963: “The Plywood"
52


Right: Harry Holden, truck driver at Mill Y had been on the job ever since New England Box Company started operating its own trucks.
Below: Carts and tracks were used to move material in the backyard of the factory (left), and working in the office are Laurel Stinson and Gladys Hurley (right).

Making wirebound cleats are (left to right) Betty Jacobs (off bearer), Ivan Bartlett (operator) and Gladys Murdock (sorter).

Working in the wirebound department are (left to right) Joe Day (foreman), Gladys Murdock (stock placer), Alice Sage (cleat placer), Eddie Green (stock placer), Mickey Maher (operator) and Ed Bartlett (off bearer).
“Harder to Peel Logs Than Bananas”

So reads a post-war “banana box” brochure from the New England Box Company. When the war ended, “The Plywood” returned to making primarily bread and banana boxes. The brochure highlights how many logs were needed to feed the plant year-round and what it took to get them ready for production: “In the Wilmington mill where 100 skilled hands fabricate all kinds of plywood boxes, the logs are cut to length, steamed and turned into veneer on powerful lathes. It is a fascinating sight to see a log 50 inches long and 20 inches in diameter slowly disappear and run down the table as a thin ribbon of wood 1/16 inch thick.”

Gradually, cardboard boxes replaced wooden boxes like those made by New England Box. Production faded, and the company closed.

Opposite

The lathe creates a long ribbon of veneer. Blanche Mill’s father, Howard Farrington, is seen (center right) operating a second lathe. Inset, from the brochure: “In the mill yard ... logs are piled high as a reserve for summer use. Snow furnishes the transportation system to bring the high grade logs in from the distant hills.”

Left: Images from the post-war brochure.
During my school years, I lived directly across the Deerfield River from The New England Box Company. I was told they made wooden boxes for shipping bananas. Some people called it The Plywood Factory. They had a big yard over there with lots of lumber piles on it.

It was the main industry in town for several years and many people were employed there. My father, who was a carpenter, worked there some winters when his work was scarce.

I remember we often knew the correct time by the mill whistle. It would shrilly announce at 6:45 am that it was "time to come to work"; at 6:55 it would blow a real short hoot to "get ready to work" and at 7:00 am a real long one to let employees know that they had better stop fooling around and "get to work". Another long hoot at noon signaled the lunch hour. Again at 12:45, 12:55 and 1:00 pm the three whistle alert system sounded and the "day's work is done" blast went off at 5 pm. That whistle was a big help in getting us up and off to school in the morning.

During my earlier years there was a wooden bridge across the river. When I was about ten years old, it was getting rotten and full of holes and so was closed to traffic. Once in awhile we children would go on it to play. My mother would get really angry at us when she finally noticed us, and we would get some well-deserved scoldings and sometimes a little more!

After we realized the dangers on the bridge, and as we got a little older, we went a few feet down river to the dam. When the water was low enough, we would go across the dam and into the lumber yard. We had more fun climbing up on those lumber piles playing imaginary games. Why some of the mill officials never saw us, I'll never know. The bridge and the dam are now long gone. Another piece of Wilmington history now in the book!*

— Barbara Haskins Look

*Above: A view of the second bridge leading to the employee housing. By the late New England Box years, the bridge became so decrepit it had to be torn down. The dirt road is now Route 9.

Inset, left to right: Factory workers Earl Crawford, Everett Cannon, Pete Reando, and Ray Lazzelle.
After years of dormancy the factory was auctioned in 1963. Local entrepreneur Eddie Barber was on his way to town when he heard about the auction. Interested buyers were instructed to call the bank in Greenfield to make a verbal offer. Barber had never seen the factory but he decided to place a bid. Having only a quarter in his pocket, he borrowed 10 cents to make the 35-cent call. Several hours later, his bid of $10,000 had won. He and partner Thomas Bumferd were the proud owners of a dormant factory. Barber sold the factory’s production equipment, and so the building was empty as well as silent.

Not long thereafter, Jim Fowler, of the popular television show *Wild Kingdom*, was traveling through Wilmington and left his unique front-and-rear-wheel-drive dirt bike called the “Trail-Breaker” at Greene’s Service Station for repairs.
The bike originated in California where it was designed by Charles Fehn. His concept was a lightweight, durable, and reliable off-road motorcycle that could travel over obstructions and in mountainous regions, on snow and soft ground. Fehn patented the hollow aluminum wheels, each holding 4.5 gallons of liquid ballast or fuel. When the wheels were empty, the bike could float. A company called Nethercutt Industries agreed to produce the “Trail-Breaker”.

Successful businessman Orla Larsen and friend Nick Harris saw the bike at Greene’s, became dealers, and then bought the company in 1965. They renamed the company “Rokon” after Larsen’s local lodge “On the Rocks”. Eddie Barber leased them the factory, though Rokon did not utilize the whole site.

Larsen and Fowler promoted the Trail-Breaker to Wild Kingdom host Marlin Perkins, and subsequently the bike appeared on the program. Fowler’s televised rides in Peru and Kenya made the bike famous. Beginning in 1966, they produced a model called the Mark III Explorer, one of Rokon’s most popular models. It could climb a 60-degree pitch, weighed only 180 pounds and could go virtually anywhere. Larsen paid local high school kids $2 per hour to test-ride the bikes up and down Mount Snow. Improvements were made when parts failed. Twenty employees assembled up to seven bikes a day. There were 157 dealers at one time, 55 of which were in New England.

In late 1968, Larsen decided to move the factory to Keene, New Hampshire, to increase the company’s production capacity, which had almost reached the million-dollar mark. Larsen remained involved with Rokon until 1981. Rokon moved several times around southern New Hampshire. It operates today in Rochester, New Hampshire.
The Not-So-Secret Formula

1971 – 1988
Lincoln Haynes had done numerous innovative projects in the valley over the years. Haynes approached Barber to buy the again-dormant Mill Street site, perhaps to make it into a door factory. After years of bargaining, Barber finally sold Haynes the site in 1971 for $75,000. But instead of making doors, Haynes chose a different product.

Authentic weathered siding from barns’ exterior walls was a high-demand product in the 1970s. It could only be procured by prying the siding off unused Vermont barns. The supply quickly dried up and greatly increased the price for the product.

Haynes saw the opportunity, but wanted to keep his idea for meeting the demand a secret from his competitors for as long as possible. Haynes’ idea was to make fresh cut lumber look old. He developed a formula that quickly became “not-so-secret” to make local pine and hemlock look weathered. He formed the Vermont Barnboard Company to produce lumber, barnboard, and by-products.

Right: Haynes freshened the plant’s visibility from Route 9 while at the same time making long-overdue infrastructural improvements.

Lincoln Haynes, inventor of the Vermont Barnboard Company’s “not-so-secret” process.
The factory was in poor shape. Before he could produce anything, Haynes had structural work to do. He spent a year repairing roofs, fixing plumbing and electrical systems, and replacing windows. Whenever beams or posts got in the way, Haynes replaced them with huge steel beams which allowed forklifts and tractors to move faster and more freely.

The factory was also too small and outdated to manufacture the product line Haynes envisioned. He needed a new energy source to replace the outdated electric generator built during the Ludington days. He needed much more energy – heat and steam – to fire bigger kilns and run more machines. Haynes needed a fleet of trucks, a place to maintain them, more room for sawing logs, and offices to manage his booming business. He would build additions that, over the next 14 years, ballooned the factory’s footprint to 82,000 square feet. See a diagram of this expansion on page 77.
Power-Producing Innovations

Haynes always envisioned the future. He worked constantly to change and improve the output and efficiency of the factory.

Two bays of his new addition housed a two-story steam boiler and a three-story sawdust bin. The boiler was designed to turn the factory’s sawdust into heat for the factory and steam for the new kilns. Sawdust was collected throughout the plant via a series of pumps and blowers, fed into the bin, and then conveyed and blown into the boiler.

The boiler was so large that it had to be lifted and welded into place. Then cinder block walls and a wood roof enclosed it. Local handyman Gary Lackey welded tubes throughout the boiler where water was pumped in, heated, and then converted to steam. He later added a catwalk that the boiler operators used.
To produce steam for drying large quantities of wood in the kilns, an intricate system of blowers and belt-driven electric pumps fed sawdust into the boiler’s combustion chamber. The boiler was staffed around the clock in shifts of two operators, one of whom would venture into the sawdust bin and stir the pile to keep it from clumping. He wore a rope around his waist to be pulled out in case the pile collapsed.

A side view of the two-story steam boiler with a catwalk for the boiler operators who worked in shifts around the clock. The lower level housed the combustion chamber, while the upper story had pipes in the core filled with 2000 gallons of water that, when heated, produced steam.

The green tower houses a conveyor belt to draw sawdust from the three-story sawdust bin via a series of blowers and pumps. When the sawdust reached the top of the tower, it was blown down the chute and fed into the combustion chamber. A series of pipes, blowers, and pumps throughout the factory gathered sawdust to fill the bin. See the photo of the roof-top pipes on page 76.
As large as the three-story storage bin was, Haynes ran out of space to store the immense piles of sawdust his factory was producing. He designed and built a three-story silo adjacent to a large new log room where the production process started. The silo's dome roof was so heavy that the first crane brought onsite could not lift it, so a second, larger crane was used to finish the job. Several augers rotated at the bottom of the silo to keep the sawdust pile from clumping.

After the silo was filled, the factory still produced more sawdust than it could store under cover. Huge piles of sawdust and mulch were created on the west end of the property.

The not-so-secret formula required a much larger wood drying capacity than the old kilns could handle. Haynes built three large cinder block bays adjacent to an open-sided shed-roofed staging area to move stacks of wood in and out of the kilns. He brought in a two-story propane boiler that barely made it through the local roads, only to reconsider its energy costs and then send it back. Instead, he decided to use steam generated by burning sawdust to dry his wood. Each of the kiln bays was climate-controlled with automated roof vents and heat exchangers to manage the temperature and humidity.
This aerial view was taken after the silo and boiler room complexes were built, but before the second sawroom was built (far right, just to the right of the smokestack). The foreground illustrates a recurring theme for 45 Mill Street – huge piles of logs. The factory started out using hardwood in the early 1900’s and switched to softwood by the late 1900’s. The rail spur changed to an entry road (center) while a new road (far right) was added and nicknamed Plywood Street during the New England Box Company days. Note the series of pipes along the roofs of the main block and boiler room that collected sawdust for the huge boiler.

Vermont Barnboard Company
BUILDING GROWTH: 1971–1988
George Davis worked at Vermont Barnboard for many years. His experience is the basis for the diagrams below and on Page 80 that depict the barnboard manufacturing process. Most steps are numerically keyed to pictures on the following pages.

Logs started the production process in the newly-made log room (1) by being placed on the first live deck. The debarker stripped away the bark (2). Davis loaded debarked logs onto the second live deck (3) which sent them inside the factory.
Logs were ripped into boards and slabs (5) which were dropped into a pit and chopped into bark mulch. Men stacked freshly-sawn boards (7) into “cubes” for drying. Cubes were made ready (8) to be picked up by forklifts and placed in the kilns.
Dried boards from the kiln were fed onto a long machine via conveyor to undergo the critical phases of the not-so-secret process. First, the boards (10) were scratched by spinning wire brushes to create a weathered look. Next, the boards were stained (11). Haynes mixed his own stains in a large shower stall next to the machine (upper left of photo below). Then the boards were fed into a dryer (12). When the boards were dry, they were ready for sorting and packaging (13). Not all barnboard came out good enough to sell by Haynes’ standards, so he established a “seconds” market. At the end of the production line, workers collected the imperfect boards to make furniture, boxes and other products (14).
Haynes tried to sell or use every by-product at the site. He sold the chips from the log debarker as bark mulch. He built a hopper to load trucks with the chips, and sold them as far away as Boston. The log slabs were chopped and loaded into trucks via a subfloor conveyor line. They were sold to a paper mill in Ticonderoga, New York to be made into pulp. The sawdust, though, was the largest manufacturing byproduct. Some of the sawdust hill still remained in 2011.
The demand for barnboard – similar to the demand for wooden bowls and plywood fruit boxes – eventually slowed. Haynes sold the factory to Ted and Mavis Boggio for $413,000 in 1986, and he stayed on part-time to assist them with the production of barnboard. At that time, the factory employed less than 30 people. When demand died, the mill equipment was auctioned. In 1988 the barnboard franchise and trade name were sold to a Maine competitor.

Haynes' health faded and he passed away in December of 1988. Coincidentally, the factory went silent at almost the same time.
An Ending And A Beginning
1988–2012
The factory was sold at auction to local businessman Kevin Moore, former co-owner of W&W Building Supply. The local lumber and hardware business was booming in the late 1980's, and Moore picked up the 13.5 acre Mill Street site for $500,000 in January, 1989. In subsequent years he sold off two parcels until 9.5 acres remained.

Moore focused on the first floor of the factory and created a storefront on the backside of the building called Mill Street Lumber. The site briefly saw activity. During the 1990's space was rented to several cottage industries including an electrician, a small engine shop, and a stone carver who made, among other things, headstones.

Soon, though, Moore ran into financial difficulties. The Vermont National Bank held Moore's mortgage and began foreclosure proceedings in 1996. The bank auctioned the building, which was devoid of a water supply for its sprinkler system because the water pipe located under the Deerfield River that fed the system had cracked.

Local entrepreneur Bob Grinold won the auction in the fall of 1996 at just $13,000 for the 82,000-square-foot building and its immediate 9.5 acres. His concept was to renovate the building into a conference center, but conditions were not right at the time. He leased parts of the site to a garage door company and started Mill Street Storage for boat and car storage.

That same year, the Deerfield Valley Transit Association was formed as a private, non-profit corporation to provide public transit to the valley. Nicknamed "The MOOver", its buses were spotted to look like Holstein cows by artist Skip Morrow. By serving the region's
seasonal tourist demand as well as developing year-round local ridership, the DVTA rapidly expanded to become the state’s third largest transit provider. Ridership ballooned to 293,000 rides per year on the 23-vehicle fleet.

The company had no real home. The DVTA leased garage space where it could find it, and rented a small office space in West Dover. In 1998, the DVTA received grants and an earmark from Senator Leahy to determine what site in the Deerfield Valley was best suited for its home. Numerous needs and scoping studies were done, and all of them determined that 45 Mill Street was the best site for the DVTA.

A New Tenant

In 2000 Grinold rented the one-bay garage and the former log yard to the DVTA.

Before buying the recommended site, a series of studies were done: environmental, structural, commercial, and brownfield studies, all looking for practical ways to save the aging structure. The DVTA researched how to fit its bus maintenance and operations into spaces not meant to accommodate something as large as its 40-foot vehicles. The research proved conclusively that the factory could not be renovated to accommodate the DVTA’s needs and requirements.

When Grinold put the site on the market, the DVTA secured a note from him and bought the property in July 2004 for $285,000.
The idea was to stabilize the structure and potentially find other uses for it. Concepts included a teen center, adult day care, congregate meal site, senior or low-income housing, and other human service functions.

The DVTA spent another $88,000 to remove identified liquid and solid hazardous materials including asbestos, large quantities of stain and oils, and hazardous pipe insulation. Local environmental consultant Catamount Engineering and other firms spent several years removing these materials that were commonly used and accepted long before they were known hazards.

But the structure had gone too long without maintenance and could not feasibly be renovated to meet current safety code requirements. Many sections of the building had weakened and collapsed. The DVTA Board of Directors was left with no choice but to plan for a new building, and in 2009 demolition of the factory began.

The demolition process was designed from the outset to focus on recycling material and minimizing the amount of debris going to the landfill. Over 98% of the factory debris was reused or recycled.
Above: The former MILL Street Lumber storefront as it looked in 2003. The asbestos siding on the three-story section was removed in 2009. Lincoln Haynes’ office was in the shingled section on the left.

OPPOSITE | Clockwise from top left: The open area was where the second lathe operated during the peak of the New England Box era (see page 55); what remained of MILL Street Lumber’s main salesroom; the bottom photos depict the collapse of the wirebound department used during the New England Box era.
The three-story block began to visibly buckle in May 2011. It threatened the garage next to it and was condemned. An emergency demolition (below) took place in June 2011. The photo sequence shows the block’s collapse as it is pried from the opposite side by an excavator.

Above: Demolition resumed in July 2011 and site clean-up continued throughout that summer. First, the kilns were torn down (upper left), then the circa 1925 building (upper right), and finally the 1916 offices section (lower left). After the buildings hit the ground, they were plowed into a debris pile (lower right) to begin the material recovery and recycling process.
Above: Wooden remnants were fed into a huge tub grinder which reduced them to coarse mulch. The pile on the right was the building after its first pass through the grinder. On the left were the remains of the Somerset pipeline pieces that Haynes did not sell.

Below: The tub grinder in action (left). Steam rose from the mulch when it was disturbed. After the initial pass through the grinder, the building mulch was sent through a second time to generate a high-quality mulch. A loader (right) placed the refined mulch into a truck which transported it to locations throughout the valley.

Above: Leon Boyd, whose uncle, Herb, worked for Vermont Barnbrand and is shown on pages 83 and 87, cut up steel beams from the kilns to be recycled.

Left: The concrete slab floors, footings, and frost walls were eagerly sought for clean fill immediately after Tropical Storm Irene in 2011.
Plans for the Future

The DVTA designed a 16,000 square-foot structure which was a fraction of the 82,000 square-foot buildings Haynes operated. But it would finally provide one home for the DVTA including offices, multiple vehicle maintenance bays, fueling and washing systems, and drivers’ facilities.

The new design connected the site to its railroad past. The old rail bed of the Hoot, Toot & Whistle Railroad will be converted to a recreational trail from Lake Whitingham to the factory. A Riverwalk Trail leading across the site’s riverfront to the village center is also planned. Both trails would be accessed by trailhead parking and supported with signs and historic displays of 45 Mill Street’s colorful past.

But several parts of the Haynes’ structure remained. The DVTA repaired and renovated the second saw room into a workshop that housed the biodiesel production. The iconic silo and attached log room were saved for a future purpose yet to be determined.

Partial funding for this new structure and demolition was provided by Vermont’s Senator Leahy, and the DVTA continues to seek funding for the balance of the project.
The site as it appeared in 2012, ready for the next 100 years.
When looking at what remains of 45 Mill Street we might remember only the ruins of a building: rotted wood, twisted steel, cracked concrete, and nails, screws, nuts, bolts, and rivets, all coated with the rust of time. However, if we look beneath and beyond our memories of the physical structure of that complex of buildings, we see much of our nation, our state, our town, and ourselves.

In the late 19th century, when our nation was experiencing industrial growth and the demographic shifts from rural to urban that accompanied it, we see the Ludington Woodenware Company contributing to the trend by transforming Wilmington into a southern Vermont center of manufacturing and commerce. A half-century later, we see a small Vermont factory known locally as “The Plywood” playing an important role in supporting America’s wartime troops in every part of the world.

In each enterprise that occurred at 45 Mill Street we see the ingenuity, resourcefulness, innovation, and strong work ethic that have always been the hallmarks of Vermont’s entrepreneurs and dedicated workforce. Whether it was the manufacture of clothespins in the 19th century or housing a regional public transportation system today, 45 Mill Street and the enterprises it has housed epitomizes the best of Vermont values.

Even as parts of 45 Mill Street decay and fade away, we still see the spirit of Wilmington and the Deerfield Valley, and the dreamers and doers who have lived here. Look at the photos of the buildings at and near 45 Mill Street. Some are gone but others remain and serve us still. Look at the names of those who worked at 45 Mill Street. Those names live on today in our friends, neighbors, and co-workers.

As buildings crumble and memories fade we do our best to preserve our heritage as part of our individual and collective past. With the photos, personal memories, and historical accounts in this book, the significance of 45 Mill Street and those who worked there will remain for generations to come.

David Larsen
History Teacher, Wilmington Middle/High School
Former State Representative and Deputy Secretary of Education, State of Vermont
1889 The Ludington Woodenware Company is established in Michigan.

1891 The Housatonic & Wilmington Railroad (Hoot, Toot & Whistle Railroad) comes to Wilmington.

1893 Ludington products are exhibited at the World Columbian Exposition in Chicago.

1893 The New England Box Company buys the property and produces wooden boxes for fruit, meat, ammunition and other war goods.

1900s–1960s Cardboard replaces wooden boxes, and the factory slowly shuts down.

1913 Ludington leases the Wilmington site from the Hoot, Toot & Whistle Railroad (Harriman Reservoir) is built, and the railroad bridge and end train service continue into the 1980s.

1914 Ludington buys the land for $1500 and 170 employees are out of work.

1915 The Hurricane of 1915 destroys the factory slowly winds down.

1916 The Hurricane of 1916 destroys the factory and 45 employees are out of work.

1918 Larsen moves Rokon to Keene, NH.

1919 The railroad trestle at Mountain Mills is washed out by The Flood of 1917.

1920 The Ludington Woodenware Company purchases the Ludington mill.

1921 Ludington rebuilds on a smaller scale.

1922 Ludington leases the site to Ted and Marie Boggio of Haynes Brothers for $500,000.

1923 The Vermont Barnboard franchise and trade name are sold to a competitor in Maine as demand for barnboard slows.

1927 The railroad trestle at Mountain Mills is washed out by The Flood of 1927.

1927 The Caledonian Exposition is held in Ludington. Ludington woodenware products are exhibited at the World’s Fair.

1927 Thomas Barnfield and Ed Barber purchase the site unseen at auction for $10,000. They sell most of the mill and production equipment.

1927 Larsen moves Rokon to Keene, NH.

1929 Rail service returns to Wilmington.

1930 The Caledonian Exposition is held in Ludington. Ludington woodenware products are exhibited at the World’s Fair.

1931 The New England Box Company buys the property and produces wooden boxes for fruit, meat, ammunition and other war goods.

1932 The Hurricane of 1932 destroys the railroad bridge and ends train service.

1933 Larsen moves Rokon to Keene, NH.

1935 The Hurricane of 1935 destroys the railroad bridge and ends train service to Wilmington.

1936 Larsen moves Rokon to Keene, NH.

1936 A one-acre parcel of the site is sold to the Deerfield Valley Grain Company, and eventually becomes home to Guy Hawkins, plant superintendent during the 1940s.

1936 The Hurricane of 1936 destroys the railroad bridge and ends train service to Wilmington.

1937 The railroad trestle at Mountain Mills is washed out by The Flood of 1937.

1937 The Caledonian Exposition is held in Ludington. Ludington woodenware products are exhibited at the World’s Fair.

1938 The Hurricane of 1938 destroys the railroad bridge and ends train service to Wilmington.

1939 Larsen moves Rokon to Keene, NH.

1941 Larsen moves Rokon to Keene, NH.

1945 Larsen moves Rokon to Keene, NH.

1946 The building’s decay becomes so severe that the CVTA determines that it needs to be torn down.

1947 Larsen moves Rokon to Keene, NH.


1950–1960s Cardboard replaces wooden boxes, and the factory slowly shuts down.

1951 Ora Larsen leases some of the facility to produce Black & Decker power tools.

1955 Larsen moves Rokon to Keene, NH.

1955 The Norwich Box Company buys the factory for $77,000. His new company is called Vermont Barnboard.

1956 Local businesswoman Bob Griswold purchases the factory for $13,000 and the home for $27,000 at auction.

1957 Larsen moves Rokon to Keene, NH.

1959 Moore builds a showroom for a new lumber store, N&W Street Lumber, and renovates the first floor of the 1916 block. Several cottage industries share the site.

1960 The Deerfield Valley Transit Association leases the garage portion and parking area from Griswold for its public transit business.

1961 VTld Association leases the garage portion and parking area from Griswold for its public transit business.

1965 Larsen moves the company to a new location on the site called The Rock.

1968 Moore builds a showroom for a new lumber store, N&W Street Lumber, and renovates the first floor of the 1916 block. Several cottage industries share the site.

1969 Larsen moves to Vermont Barnboard. The Vermont National Bank forecloses on the property and puts the 9.5-acre parcel containing the factory up for auction. Larsen eventually buys the company and names it Rokon after his bridge called On The Rocks.

1971 The Vermont Barnboard franchise and trade name are sold to a competitor in Maine as demand for barnboard slows.

1974 Larsen moves Rokon to Keene, NH.

1976 Larsen moves Rokon to Keene, NH. His new company is called Vermont Barnboard.

1977 Lincoln Haynes of Haynes Brothers buys the factory for $75,000. His new company is called Vermont Barnboard.

1978 The Vermont Barnboard franchise and trade name are sold to a competitor in Maine as demand for barnboard slows. The property is purchased by Kevin Moore for $500,000.

1979 The New England Box Company buys the property and produces wooden boxes for fruit, meat, ammunition and other war goods.

1980 The site is returned to its 1914 state. The CVTA awards an earmark to tear the facility down.

1981 The CVTA begins planning for a new facility on the property.

1984 Moore builds a showroom for a new lumber store, N&W Street Lumber, and renovates the first floor of the 1916 block. Several cottage industries share the site.

1985 Moore builds a showroom for a new lumber store, N&W Street Lumber, and renovates the first floor of the 1916 block. Several cottage industries share the site.

1986 Larsen moves Rokon to Keene, NH. His new company is called Vermont Barnboard.

1987 Larsen moves Rokon to Keene, NH. His new company is called Vermont Barnboard.

1990 The CVTA buys the property from Griswold for $285,000. Removal of hazardous materials and decades of waste begins and continues into 2000. Several studies are commissioned to determine additional viable uses for the building.

1995 The Vermont National Bank forecloses on the property and puts the 9.5-acre parcel containing the factory up for auction, as well as the one-acre home adjacent to it.

1996 The building’s decay becomes so severe that the CVTA determines that it needs to be torn down.

1997 The CVTA begins planning for a new facility on the property.

1998 Larsen moves Rokon to Keene, NH.

1999 The CVTA buys the property from Griswold for $285,000. Removal of hazardous materials and decades of waste begins and continues into 2000. Several studies are commissioned to determine additional viable uses for the building.

2000 The Deerfield Valley Transit Association leases the garage portion and parking area from Griswold for its public transit business.

2001 Most of the structure is torn down and the site is returned to its 1914 state.

2004 The CVTA buys the property from Griswold for $285,000. Removal of hazardous materials and decades of waste begins and continues into 2000. Several studies are commissioned to determine additional viable uses for the building.

2006 The building’s decay becomes so severe that the CVTA determines that it needs to be torn down.

2010 The CVTA begins planning for a new facility on the property.

2011 The building’s decay becomes so severe that the CVTA determines that it needs to be torn down.

2011 Most of the structure is torn down and the site is returned to its 1914 state.
FOOTPRINT THROUGH THE YEARS

Ludington Woodenware: 1915

Ludington Woodenware: 1916–1927

Deerfield Valley Plywood: 1927–1941

New England Box: 1941–1963


Deerfield Valley Transit Association: 2012

OWNER HISTORY of 45 MILL STREET

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<th>PURCHASE DATE</th>
<th>OWNER</th>
<th>PURCHASE PRICE</th>
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<tr>
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<td>Ludington Woodenware Company</td>
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<td>July 8, 1927</td>
<td>Deerfield Valley Plywood Company</td>
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<td>July 31, 1941</td>
<td>New England Box Company</td>
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<td>December 2, 1963</td>
<td>Edward Barber and Thomas Bumferd</td>
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<td>January 25, 1971</td>
<td>Haynes Brothers (Lincoln Haynes)</td>
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<tr>
<td>December 31, 1986</td>
<td>Haynes Products (Ted and Mavis Boggio)</td>
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<td>January 6, 1989</td>
<td>Kevin Moore dba Mill Street Lumber</td>
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<td>March 7, 1996</td>
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<td>July 14, 2004</td>
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</table>
We’ve walked through the factory many times, but when we toured it with Jim Raymo and George Davis everything changed. With their help we were able to visualize the many manufacturing processes diagrammed in this book.

Brian Donelson, author of *The Coming of the Train Volumes I and II*, provided invaluable help with files, drawings and research. He was vital in getting this book published.

This book is made possible by the efforts of many people. We borrowed research from writers and historians who gladly shared all they knew, and several DVTA staff contributed in many ways. Of great value were conversations with those who worked there or whose relatives worked there. Because of all of them this book is made possible.

**ACKNOWLEDGEMENTS**

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