Ford Manufacturing Company, Waterford, New York

A History of the Textile Industry in the United States

In 1788, the United States was riding a wave of triumph and progress. The Constitution had been ratified, the British had been defeated and new technology was ushering in an industrial era. At this point, American households were still spinning and weaving their own fabrics by hand-powered tools. England's textile production, however, was leaps and bounds ahead of the United States because a new technology, the Arkwright system, had transformed the spinning, carding and weaving processes into one, water-powered process, making textile production for the first time in history a paced, mechanized production (Dunwell 1978:5-10).

By 1790, the United States finally obtained the mill technology that England had held so secretively. This achievement was due in large part to the immigration of Samuel Slater, who was an experienced miller instrumental in the development of England's system. Slater moved to Rhode Island where he, along with Moses Brown, created the first water-powered spinning machine, capable of producing spooled yarn on a scale so great as to soon make the hand-spinner obsolete (Dunwell 1978:15). This first textile mill set the precedent for the industry nationwide, both in its mechanics and its organized "mill town" which housed and serviced laborers.

Water became the top priority in the developmental location of textile mills. Physical conditions in New England and eastern New York far surpassed those in the rest of the young country. There was plenty of water, the humidity was sufficient for spinning, access to seaports was convenient and there was an abundant labor supply, mainly in the form of whole families who were willing to work (Ware 1931:14). For these reasons the textile industry took root all across the northeast.

The first textile mills could only manufacture the yarn needed to make fabrics, while the weaving was still accomplished with hand-powered looms by industrious workers around the mills. In 1812, on the Wynants Kill, a tributary of the Hudson River, "a water-powered spinning mule could keep thirty to forty hand-operated looms busy making cloth in nearby homes" (Harris and DeBlois 2005:14). It wasn't until the 1820s that the fabric production itself became mechanized and brought into the factory domain. Mechanized "power looms" were patented in the early 19th century and soon versions that wove patterns and printed designs were commonly in use. Again on the Wynants Kill by 1930, the same mill was capable of producing 2,000 spindles which kept 60 power looms busy making 250,000 yards of sheeting (Harris and DeBlois 2005:14).

As the 19th century progressed, so did the available energy sources to the textile industry. The use of steam engines grew rapidly through the middle part of the century. Steam-powered turbines and the "belt drive" became intrinsic to the design of new mills during this period as they not only increased the speed at which machinery could be operated, but also increased the mill's efficiency, mobility and versatility. No longer did mill

locations need to be strictly governed by the availability of a suitable water source. Instead of building mills in isolated locations, steam power encouraged more concentrated groupings of mills near larger waterways (for exportation) and bigger cities (for labor). (Dunwell 1978:68, 104-105).

A shift occurred in the later half of the 19th century as the textile manufacturing establishments in the United States began to turn to the knit-goods industry in droves. In a span of twenty years the number of such establishments jumped from 248 to 796 (1870 to 1890) with the value of the knit products also rising from $18,411,000 to $67,241,000 (Clark 1929a:443). The raw materials used in the knit-goods ranged from cotton to wool to any combination of the two materials. As Victor Clark reports, approximately one-half of the knit underwear manufactured in 1890 was merino, "a word that in its application to the knitting industry had lost its original signification of a special grade of fine wool and had become a trade term designating goods made of a mixture of wool and cotton spun together" (Clark 1929a:443). However, an even larger portion of the underwear and hosiery was still made of cotton, which was cheaper and more affordable for the consumer.

In 1855, Clark Tompkins, from Troy, New York, patented the first fully mechanized knitting machine. The upright rotary knitting machine relied on mechanical advances not made until the 1840s before its invention could become a reality (Dunwell 1978:61). In many ways this invention foretold the industrial future for the Hudson and Mohawk River Valleys. By 1890, the Mohawk Valley had become the number one knit-goods manufacturing center in the country. New York knit-goods manufacturers primarily produced underwear, as opposed to hosiery, whose market was monopolized by Philadelphia manufacturers. Two-thirds of all underwear produced in the United States in the late 19th century was made New York, and of that a large percentage came from the Mohawk Valley. The trend continued as in 1909 *The Knit Underwear Industry: A Report on the cost of production of knit-underwear in the United States* reported that New York State produced 33.5% of all knit goods in the United States at that time. (Clark 1929a:443-444; Department of Commerce, Bureau of Foreign and Domestic Commerce [DC, BFDC] 1915)

A major difference in the production of knit-goods and woven goods was that the former required for the fabric to be cut and shaped into a garment. Additional garment-making facilities, such as sewing rooms, were often included within the factory. Also sometimes included in knitting factories were the dying and finishing processes. Machinery and dyestuffs used in the dyeing and finishing processes were for the most part imported or copied from European models. Likewise, most of the labor employed in these operations was immigrant. (Clark 1929b:220-221)

The Ford Manufacturing Company

> *"The knit-goods industry is one of the main subdivisions of cotton manufacturing and includes all goods made from one or more continuous threads into a web by means of a*

series of interlocking loops or stitches. Underwear is that branch of the knit-goods industry which included all underclothing ([DC, BFDC] 1915)"

The Ford Manufacturing Company falls very neatly into the history outlined above. Incorporating his new company in 1891, John Ford first erected a wooden building on Fourth Street in Waterford for his underwear-knitting operations. When that first building burned in the mid-1800s, Ford purchased a plot of land on the banks of the Hudson River at 123 North Second Street on the outskirts of an already booming industrial town (Manogue 1968). Located at the junction of the Mohawk and Hudson Rivers, Waterford was poised to take advantage of the transportation these waterways afforded and also the town's proximity to Albany, just miles south on the Hudson. Just across the Mohawk sat Cohoes, the birthplace of manufactured American knit-underwear ([DC, BFDC] 1915).

At the time of construction of the new factory in 1896-97, the Ford Manufacturing Company joined the ranks of establishments along the Mohawk Valley producing knit-goods in vast amounts. The Ford factory specialized in "Fine Knit Underwear" as 1897 Sanborn Fire Insurance map describes (Figure __). It is not hard to imagine why John Ford chose Waterford as the location of a new knit-goods mill. The town already had at least one other textile mill, the Waterford Knitting Company (later to become the Laughlin Textile Mill), and likely more located along the Champlain Canal. The Mohawk Valley was leading the nation in knit-goods production and future of the trade only looked bright.

In 1919, the Ford manufacturing Company was purchased by Robert Reis and Company based in New York City. The factory was still referred to as the Ford Manufacturing Company in the future to distinguish it from other factories Reis operated. The purchase of the company by an up and coming New York City company (Robert Reis and Company) began a new era for underwear manufacture out of the Ford plant. The Reis Company had their business offices in the Empire State Building, while most of the manufacturing occurred in the Ford plant. Reis also operated another plant at Cambridge, New York. The Ford plant produced all the underwear and sportswear and provided the smaller Cambridge plant with raw material and cut goods for their manufacture of a limited amount of goods. (Manogue 1968)

Since John. Ford had already seen his first factory burn to the ground it is not surprising that the businessman signed up for fire insurance after completing his second factory on Second Street. Early drawings of Ford Manufacturing by the Sanborn Fire Insurance company provide useful information not only about how the building itself evolved with various additions and demolitions, but also how the processes inside shifted from room to room as technology changed and new space became available. There are Sanborn maps for the years 1897, 1902, 1909, 1914 and 1934.

The 1897 Sanborn Map, drawn shortly after the building's completion indicates that there were three floors in the original Ford factory. The main body of the factory contained the following facilities: first floor, shipping; second floor, finishing and cutting; third floor,

winding and knitting. In the rear of the building the map indicates an engine room (fueled by coal) and a stockroom with a drying room on the third floor. A dye house is located on the back of the building, presumably only one story tall. A detached storage building occurs to the north of the property near the waterworks, which is also shown on the map. The firth-floor tower in the front corner of the building contained a 5,000-gallon tank of water to be used in case of fire.

The 1902 Sanborn map shows two major changes to the property: A large addition has been constructed on the rear of the property near the "dyerie," and a small shed extends from the eastern end of the new addition. The addition housed a larger drying room. This map also gives more detail about the dyerie room, reporting that on the first floor there was washing, on the second printing and on the third finishing. A large storehouse was also constructed on the front of the detached storage building. There are no comments made about the basement on this map. No changes to the waterworks are noted.

The 1909 Sanborn map shows even greater changes to the building and property. Another small addition was added to the northern side of the building. On this map, instead of listing the facilities of each room separately, they are listed generally by floor for the whole building, suggesting the operation as a whole was becoming larger scale and the factory was beginning to use larger open spaces for the various processes. On the first floor was knitting, shipping and packing, on the second floor was sewing and finishing. There is no mention of the third floor's use. According to this map there is a boarding room in the basement as well as a washroom. The small shed that once extended from the eastern end of the new addition has been removed, and a series of three detached sheds, including one identified as a soap house, occur to the rear of the main plant. Also, the recent storehouse addition on the detached storage building appears further enlarged.

The 1914 Sanborn map shows minor changes, with the addition of another boarding area (in addition to the boarding area in the basement) attached to the sewing area in the rear of the building. A new structure marked "box house" is now located to the south of the mill near the property boundary, and several of the smaller outbuildings have been removed/relocated, including the soap house, which is now located in the southern part of the property near the new box house.

The next Sanborn fire insurance map does not occur until 1930. However, a plan view and elevated drawing of the building were commissioned in 1926 and is currently on file at the village water treatment plant (Figure 18). These drawings were apparently made at the time of significant new expansion at the Ford Manufacturing Company. An entirely new wing of the facility is added to the south, doubling the amount of area for knitting and finishing. In addition, a large washroom is constructed on the rear of the mill directly behind the new knitting and finishing addition. Similar to the original factory building, the new wing has a tower in its southwestern corner that contains a 10,000-gallon water tank presumably for fire safety. Other than indication of a vault in the basement of the new wing, there is no other description of facilities in the basement of either the new

wing or the original factory. Several outbuildings have also relocated, including a building marked "sulphur and bleach house" in the rear of the property. This drawing also shows modifications to the waterworks complex, although none of the rooms or additions are labeled. The outline form of the building conforms to the general outline on the 1930 Sanborn map.

The 1930 Sanborn map identifies many of the changes shown in the 1926 drawing, with slight variations in the placement of the smaller outbuildings (Figure 16). The coal shed that appears on the 1914 map has now been replaced with a long brick wing with a front office and central storage space. An addition has been constructed on the rear of the waterworks to serve as the filter room and chemical storage area. A large aerator building also appears on the map on the southern part of the lot near the mill complex.

The 1934 Sanborn map shows no changes with regard to the mill complex, although the roof covering the coal shed has been removed. Like the 1930 map, the 1934 map gives less detail about the inner layout of specific facilities and focuses more on general usage of the factory. For this reason these later Sanborn maps do not provide information about the happenings on specific floors like the previous Sanborn maps did.

These maps display a significant amount of development within the Ford Manufacturing Company. As the company changed hands in 1919, structural and programmatic changes in the 1926 map can be attributed to the new leadership. Arthur Reis, then president of the Robert Reis and Company made substantial additions to the main body of the plant by adding a new wing directly to the south. At this point the manufacturing center moves from being the small-scale knitting, dying and finishing factory that is was under Ford to a large-scale knit-goods mass-production plant by the mid-1930s.

Over the course of Reis' ownership of the Ford Manufacturing Company, several lines of men's underwear were produced. In the 1920s Reis introduced a line of Jimsuits, Jimshirts and Jimpants, which were variations in a style of union suit (underclothing that was all on piece). During World War II underwear advertisements played on the national war cause to promote their product (Figure B1). Following the war, the major underwear companies, Reis not excluded, vied for brand name recognition. The result was names that struck a chord with consumers, or in the notable case of Reis' new line of briefs, Scandals, the risqué nature of the product was employed to bring name recognition (Figures B2 and B3). (Vintage Skivvies 2007)

An immigrant to New York City, Robert Reis, a German-born Jew, established his underwear manufacturing company in 1885 (Mitchell 2004). Robert Reis' son, Arthur Reis, followed his father as president of the company until his death in 1947 when his son, Arthur Reis Jr. took the reigns. Despite the eventual decline Arthur Reis Jr. saw in the third-generation company, he took the company through at some prosperous decades. It was in "the 1960s" that "the Reis operations employed 400 people making private label underwear for Brooks Brothers and other major retailers, and had sales of $5 million. But sales dropped to $3.5 million last year, and last spring the publicly owned company

sought reorganization under Chapter XI of the Federal Bankruptcy Act." The machinery in the Waterford plant was sold in bankruptcy court for only $50,000. (McDowell 1978)

The Reis Company was sold and it no longer could support the Ford Manufacturing Company facilities in Waterford. When asked why the Waterford plant took a down turn in the 1970s, Arthur Reis Jr., replied "The Waterford plant was old, small and had a $50,000 old bill last year that would have been double this year. And the minimum wage killed us in Puerto Rico. You pay a small premium over the minimum, but when we went there in 1956 it was about 40 cents an hour, now it's the same as on the mainland." Reis and Company also failed to upgrade its facilities with modern equipment and reports circulated of bad management. All of these factors lead to the eventual forfeit of the Waterford plant and its eventual demolition over the following decades.

In 1891 when John Ford built his first building, The Ford Manufacturing Company was the first underwear-producing mill in Waterford. Following Ford's venture, several old flourmills were converted into mills to produce underwear. By 1912 underwear was the town's largest export. Ford Manufacturing, after changing hands to the Reis Company was last underwear mill in Waterford to close making it the longest operated mill of its kind within Waterford.

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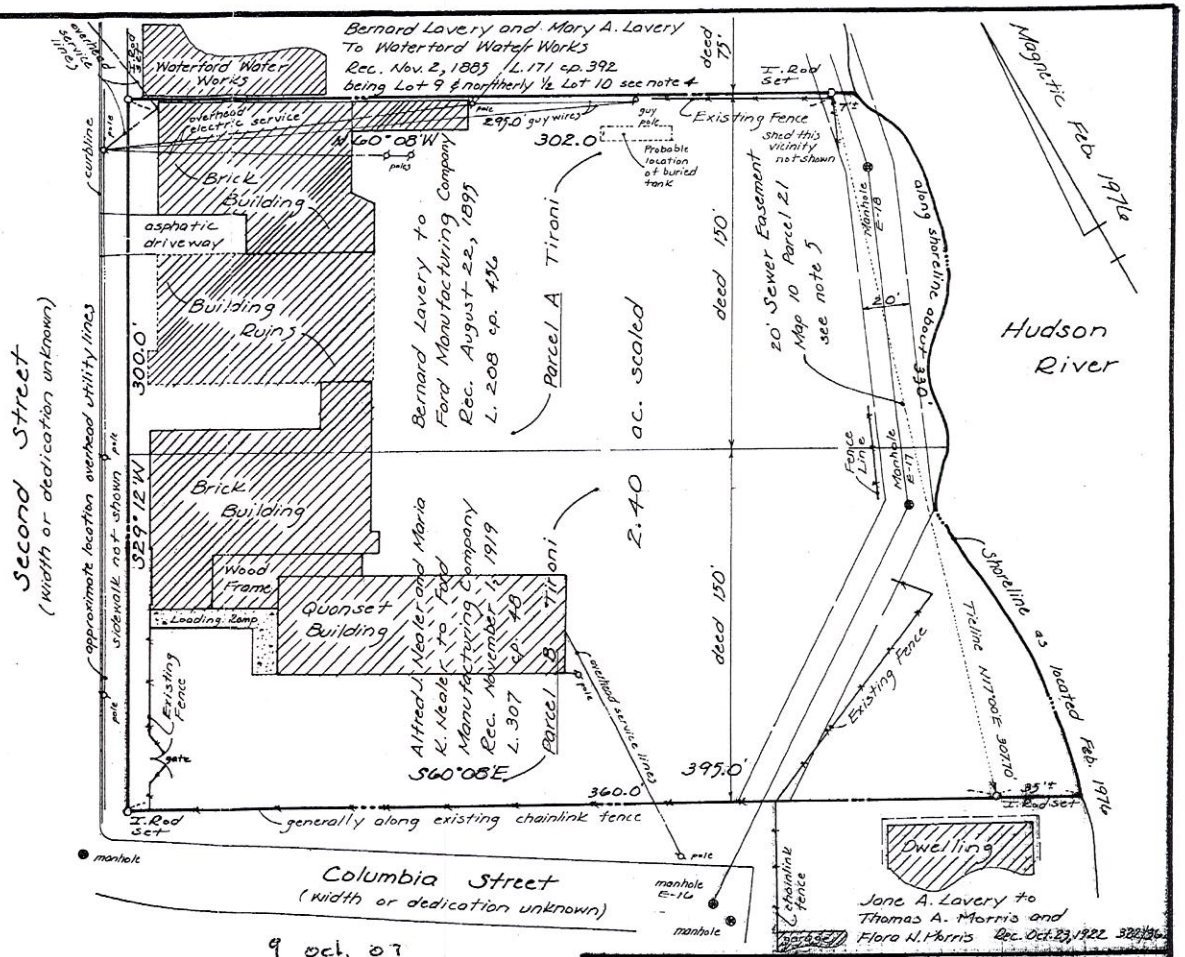
NOTES:

1. Abstract of Title not furnished.
2. Easements, Public Utilities, Deed Restrictions Zoning and Zoning Restrictions, Underground Facilities, if any, not shown; but none found except those observed and witnessed by visual physical evidence and shown hereon.
3. Deed Issac L. Ormsby as referee to Bernard Lavery recorded May 19, 1869 L. 114 ep 39 refers to a survey dated May 15, 1869 by John P. Steenburgh, this map not found in the normal indices in the Saratoga County Clerks Office.
4. Numerous deeds in this vicinity refer to a map made by George Cushing, Jr. C.E and surveyed by J.P. Steenburgh dated 1873. This map not found in the normal indices in the Saratoga County Clerks Office.
5. It is unknown if there was an Easement granted by Robert Reis & Co. to the Town of Waterford see map "Map of Easements and Rights of Way to be Conveyed to the Town of Waterford" dated May 14, 1976 last revised Dec. 23, 1976 by Charles E. Hartnett & Harold A. Behrens.
6. Title Report affecting premises not furnished.
7. Subject to the Rights of the State and or Public to that land lying westerly of the easterly line shown hereon that may be claimed for barge canal purposes, if any.



I, Charles E. Hartnett, Land Surveyor hereby certify to Board of Water Commissioners of the Town of Waterford, Lawyers Title Insurance Corporation Re: Commitment No. BD 816541 that this map drawn July 15, 1985 was prepared from a field survey completed April 9, 1985 and updated April 23, 1986 from an updated inspection of April 23, 1986.

9 oct. 07
not updated
Cht

Unauthorized Alteration or Addition to this Survey Map is a Violation of Section 7209 Subdivision 2 of the N.Y. State Education Law.
Copies from the Original of this Survey Map not Marked with the Land Surveyor's Embossed Seal shall Not be considered a Valid True Copy.

23 Apr. 86	Site inspection, revise certification and title block.		
15 July 85	Map prepared for Amer. Dev. Team, Inc.	Harold A. Behrens	L.S. 45 364

SURVEY OF LANDS OF THE ESTATE OF CLIFFORD L. TIRONI TO BE CONVEYED TO BOARD OF WATER COMMISSIONERS

Village of Waterford | Scale 1" = 50 ft.
July 15, 1985

Charles E. Hartnett & Harold A. Behrens
Land Surveying & Planning
Route 40 - P.O. Box 91 Melrose, N.Y. 12121

18-M-63 | 83-6-5

TABLE 3
LIST OF OWNERS/OPERATORS
Ford Manufacturing Co. Brownfield Project

LIST OF OWNERS & OPERATORS OF FORMER FORD MANUFACTURING SITE							
Previous Owner	**Parcel**	**Date**	**New Owner**	**Operator**	**Last Known Address**	**Phone #**	**Applicant's Relationship**
Bernard Lavery	A (Northern)	8/22/1895	Ford Manufacturing Co.	Ford Manufacturing Co.	123 Second St. Waterford NY 12188	Unknown	None
Alfred J. Nealer & Maria K. Nealer	B (Southern)	11/1/1919	Ford Manufacturing Co.	Ford Manufacturing Co.	123 Second St. Waterford NY 12188	Unknown	None
Ford Manufacturing Co.	A & B	1919	Robert Reis & Company (Pres. Robert S. MacArthur)	Robert Reis & Company	123 Second St. Waterford NY 12188	Unknown	None
Robert Reis & Company	A & B	4/22/1980	Clifford S. Tironi (died 1982)	Not Applicable	Box 267 Waterford NY 12188	Unknown	None
Estate of Clifford L. Tironi	A & B	4/25/1986	Water Commissioners of the Town of Waterford	Not Applicable	127 Second St. Waterford NY 12188	518-237-0422	Applicant