WASHINGTON, RIPE FOR THE PICKING

The time period is the 1880s—1920s, the setting, Northwest wheat fields, forests, mines, orchards, and shorelines. The characters are men—aged 20-40, mostly single, moving from job to job, following a trail of work, wages and food—and women, single and married. The hours are long, the work hard, the wages vary. Yet these men and women, harvesters and processors of the new state’s seemingly endless natural resources, turn the Northwest’s industrial wheel. An industrial revolution rages in Europe, and Washington—ripe for the picking—is a natural target for exercising newfound mechanization technologies.

COAL MINING

A DIFFICULT AND DANGEROUS TRADE

You are here: Deep in the Mines of Roslyn

With a lamp on his cap the miner makes his way hundreds of feet down along the dark, sloping shaft. He enters a cramped space and, swinging a short-handled pick, knocks coal off the sidewall. Breathing is often difficult. Ventilation is poor. So hot and humid is the mine that his clothes become soaked with sweat.

Ten hours a day, six days a week he works, piling up rock and debris in the ore car. He earns between 80 cents and $1.32 per ton of coal, making up to five dollars on a good day.

He is paid in company credit, not in cash. His earnings go back to the company. Northern Pacific owns the boarding house where he sleeps, the store where he buys food, the saloon where he washes the day from his mind.

He knows that a cave-in may bury him alive, that a spark from a lamp could ignite a fire, that poisonous gas builds up and can explode. Tomorrow he may be injured or killed. But the company provides no benefits, no burial fund. Another miner can always replace him.

Employed in a difficult and dangerous trade, he is proud of his skill, his courage, and of his work. The coal that he digs drives the steam engine, fuels the railroad. The millions of tons of ore that he and his fellow workers extract beneath Kittitas Valley run the industries of the West, drawing people from around the world to settle here.
BLACK MINERS: No Strike or Trouble of any Kind

A working man from the Midwest hears about jobs in the coal mines of Washington. The pay is good, the work is steady. Boarding a Northern Pacific train in St. Paul, he heads West. Men who get on the train in Montana say they hear that miners are striking in Roslyn, demanding an eight-hour day. At a stop in eastern Washington, Pinkerton guards come on board. They hand out Winchester rifles to the passengers.

As the train rolls into Roslyn, the Pinkertons aim their guns at a crowd near the depot. The crowd is armed and angry, but no one shoots. The newcomers are sent to work in Mine #3. A militia of 40 detectives, hired by the company, guards the mine entrance as they work.

Most of the striking miners are from Europe. They have many different accents. The African American strike breakers carry guns so they won’t be attacked. Northern Pacific pays the mine workers, including the newcomers, on whether to end the strike. Winning the vote, the company hires back only half of the striking miners. After more than 200 white miners leave Roslyn, racial tensions ease. But an atmosphere of hatred remains.

ARTIFACTS THAT TELL THE STORY

Safety Lamp, made by Hughes Brothers of Scranton, Pennsylvania between 1898 and 1937. These lamps were used for the double purpose of illumination and testing for flammable gas.

Dinner Pail, manufactured and marketed as a “Miner’s Dinner Bucket” by the Sullivan & Geiger Company of Indianapolis, Indiana; patented May 14, 1918.

Miner's Candlestick, c. 1890
The sharp end of the candlestick was embedded in the mine wall to provide candlelight in the dark shaft.

Hard Hat with “Permissible Electric Cap Lamp,” c. 1920
The fiber hat is varnished to strengthen it. A cord from the lamp attached to the portable power supply.

Miner's Cap with “Teapot” Lamp, c. 1885, brought to Washington in 1899
The oil wick lamp hanging from the front of the cap was invented in Scotland about 1850. The lamp was filled with lard oil and the wick protruded from the spout.

Carbide Lamp, patented on January 26, 1915
Carbide lamps, which were easy to light and maintain, were introduced to the mining industry around 1905 and used extensively until the mid-1930s.

Coal Car, lent by Maria and Bobby Fischer of Roslyn, Washington
In 1928, Clyde Fischer moved to Roslyn and worked as a mine foreman and engineer at Mine #3. Clyde’s son, Frank (Jay) Fischer was born in Roslyn in 1930. Frank began his career as a logger, and later opened a sawmill to cut mine props and timbers. After the mines closed, Frank operated the Roslyn Fuel Company. His son, Robert (Bobby), still operates the company delivering coal which comes by train from Wyoming.
PALOUSE WHEAT

LABORING IN THE FIELDS OF GOLD

The rolling hills of the Great Columbia Plain were open and barren when the first non-Indian settlers encountered this high desert region. Nez Perce and Cayuse Indians grazed their horses on bunch grass, a native species of wheat which covered the terrain.

Early immigrants claimed this country as cattle land. But farmers were able to obtain title.

"Hundreds of men came in last fall," noted a visitor in the early 1880s, "and this spring took claims, plowed from 50 to 200 feet square, [and] built a shanty 6 feet by 10 feet."

To most, the soil looked parched. Few believed it would sustain agriculture. But those who tilled and seeded the earth discovered its suitability for growing wheat. A floor of basaltic rock keeps moisture within the soil, volcanic minerals provide natural fertilizer, and the semiarid climate is ideal for the raising of winter-sown grain.

The wheat growers prospered with the coming of the railroad to southeastern Washington. Farmers sent grain by freight train east to other states and west to Portland and Seattle where ships carried the golden cargo to Japan. By 1910, Whitman County was the nation's wealthiest per capita.

As World War I turned European farm country into battle zones, the world's supply of wheat declined. The escalating demand for Washington wheat more than doubled its price during the war years. Borrowing money to buy equipment and land, farmers harvested larger crops and made small fortunes.

YOU ARE HERE: Harvesting the Golden Grain

Washington's southeastern grasslands are one of the world's most productive regions for raising winter-sown wheat. In July and August waves of grain ripple across the rolling hills.

Sometimes called "the poor man's crop," wheat requires little maintenance and is cheap to store. Farmers work long hours with the seasonal laborers who flock to the fields at harvest time.

Every day groups of thirty or forty laborers rise at dawn and go to work. In 100-degree temperatures they pitch hay, drive teams of horses, operate the thrasher and separator, and sack, lift, and stack the grain. Women work in the cook wagon.

HARVEST TIME

Like gigantic insects on the hillside, an array of machines moved from field to field. Weeders prepared the ground for planting. Seeders impregnated the soil. At harvest time came threshers, harvesters, and combines, derricks that dumped wheat on wagons, and wagons that hauled hay and grain.

In 1923, 15-year old Ted Porter, began his work as a mule driver in the wheat fields of the Palouse. Even with the introduction of motors to power the machinery of a combine, mule and horse teams were still providing the drive power on the rugged, hilly fields of eastern Washington.

"It was extremely dusty," recalled Porter. "All the mules below and ahead were churning up dust. You were trapped in it.... If you had a tail wind you not only got the dust of the mules but also the chaff from the combine."

3/75
EXPLODING WHEAT

As they worked hard and fast under intense sun, managing horses and machines, harvest workers guarded against accidents. One hazard they watched out for was excessive wheat dust. Dust could explode or, with a spark from an engine, catch fire. Smut, a fungus which blackened stalks and destroyed wheat kernels, raised the dust to dangerous levels.

“You just blow up like gunpowder,” remembered Harry Daily.

TRY THIS

Make a “Working in Washington” Map

- Copy and cut out the worker drawings in this section.
- Using an enlarged version of the state map on page 7, paste the images into the regions where corresponding work can be found.
- What jobs might be found during what seasons?
- Next, make reduced copies of the artifacts in this section. Paste each one onto your map next to the worker who represents the type of work in which it was used.

IN A COOKWAGON AT HARVEST TIME

Working from the early morning hours until late at night, the harvest cook prepares, cooks, and serves three meals daily to a small army of workers. Using the wood stove at one end of the mobile cookhouse, she prepares large quantities of food that fuels the harvest workers. Breakfasts of bacon, eggs, potatoes, and biscuits cooked in frying pans were only the first meal of the long workday. Often a member of the farmer’s family, the harvest cook has no running water, no refrigeration, and no prepared food. On a typical day she churns butter, wrings chickens’ necks, and bakes a dozen pies.

Her skills can make or break a harvest. Many workers decide whose crops to bring in based on the quality of the food the farm provides.

Clara Howard Richardson, who traveled with her husband and his threshing crew, “cooked for from 45 to 65 people on just an ordinary range. We could only seat 15 at the table and then we had to wash dishes between. In the morning we had bacon and eggs and potatoes and hot biscuits, and I just made batch after batch of biscuits.

“You had to keep the platters filled, and you were scared you weren’t going to have enough meat for the rest of the men.

“Everything was fresh, and of course then they would eat more. We cooked carrots and beets and beans and tomatoes, and you could always go to town and get tomatoes and beans in case lots.

“I got to bed at eleven at night and they paid me a dollar day. It was the talk of the valley. The idea of giving that girl a dollar day shows how bad they needed me.”

SEASONAL MANPOWER

Seasonal laborers often travel together from job to job, from farm to farm, offering their services as work teams. They carry their possessions wrapped in bedrolls. Many make their beds on the hay, near the horses. But they get little sleep.

“They was devilish long hours I did thresh,” recalled Edward Walters. “The whistle blewed at 4 o’clock in the morning, and we had breakfast between 5 and 6 and started work at 6AM. An hour off for noon and work till 7 at night. But some of them worked as long as they could see.”

Wheat farmers depended on migrant workers to harvest their wheat. The amount of pay offered for a day’s work had to be competitive. Joseph Guske said that his family farm paid workers “depending on what they did and what time of season and the capability of the men you hired. Some inexperienced fella, you couldn’t afford to pay ’em too much because you had to run after them too much.”
Artifacts that tell the story

Stencil, c. 1865
A farmer marked his grain bags with his initials or name to track the number of bags he took to market. The bags were then taken to a warehouse to await transport on the railroad. Wheat was transported in cloth sacks rather than in bulk because the weight of loose grain shifting in high seas destabilized 19th century cargo ships.

Hayfork, c. 1900
Men walked through the field with hayforks, gathering ten to fifteen bundles of newly-cut wheat into a shock. Shocking the wheat kept the heads of wheat off the ground where moisture would rot the grain. Hayforks were also used to pitch the wheat onto wagons for transport and onto the thresher for processing.

Jar of Wheat, from the first cargo of 31,473 bags of wheat shipped on the Dakota from Tacoma to Liverpool, 1881. Wheat was carried from Walla Walla by way of Portland, Kalama, and Northern Pacific to Tacoma.

Combine Pulley Wheel, manufactured by the Deering Manufacturing Company, c. 1910. The combine, driven by a standard team of 32 horses, is named for its combined functions of cutting, threshing, and sacking the wheat. This pulley is from a combine used on Jake Gering's farm in Adams County, Washington.

Work Harness
Harnesses differed based on the size of the horse and the task it was required to perform. This harness, with its heavy traces and pulling chains is typical of the kind of harness used by large teams during Eastern Washington’s wheat harvest.

Grooming Kit
Grooming kits including a curry comb, stiff brush, soft brush, hoofpick, mane and tail comb, and cactus cloth were used to groom horses before and after work. Careful grooming enabled farmers to assess the health of their stock.

Apple Orchards

Yakima & Wenatchee

The Yakima War of 1855 led to the construction of Fort Simcoe near which the Yakima region’s first apple trees were planted. Allotment of reservation lands to non-Indians, the routing of the railroad through the valley, and irrigation of the desert enabled orchards to flourish in this region.

The appeal of apples goes back to the Garden of Eden. But never has the appeal of growing apples been more successfully promoted than during the decade before WWI. In 1908 alone, a million apple trees were planted in Washington.

The promotional pamphlets from land speculators and chambers of commerce enticed would-be fruit growers with phrases like “Quit the strenuous life” and “Come to the land of perfect apples.”

Take a closer look

Electronic Journals

1880s to 1920s
Material World
- Black Gold
- Yellow Gold
Kids World
- School Days
Getting There
- Mosquito Fleet
- Advent of Autos
Community Life
- Alaska Yukon
- Wobblies
- Popular Songs

Logging
Material World
- Washington Trees
Kids World
- Log Camp visit
Getting There
- Moving the Logs
Community Life
- Logger's Lingo
- Timber Music

Photo Flipbooks
- Ship Building
- The Spruce Army
- Logging & Lumber
- Mining Industry
- Children of Washington
- Fishing Industry
- General Strike
- Wheat
- Orchards
- Fruit Labels
- The Gold Rush

Interactive Flipbooks
Salmon Puzzle:
- Fishing & Canning
Propeller Flipbook:
- Soldiers of the Wings
luring them with promises of soaring profits. What soared were land values. Inevitably the pre-war apple craze led to postwar glut. Millions of fruit trees were uprooted, and many farmers were forced to abandon their paradise.

**At the Time of Ripeness**

**You Are Here: In the Land of Perfect Apples**

*It is the most popular variety of the most popular fruit. More grow in this region than anywhere else. No where are they more perfectly produced. To each apple the soil transfers an excellent inheritance. Its mineral-rich volcanic ash retains moisture well. Its organic matter has composted for millenia. The semiarid climate, with summer heat yielding to evening coolness, is ideal for an orchard. The river's abundance of water channeled nearby has nourished this tree from the day it was planted.*

All year the tree has been prepared for harvest. It was pruned in January and sprayed against codling moths in February. In April its blossoms were fertilized by bees; protected, with smudge pots, from frost; and thinned so that the “king” blossoms would flourish. In May the tree was sprayed again. All summer it was judiciously watered. And now, in early September, the apples are ripe.

The pickers are careful not to bruise the fruit. Each will be wrapped in tissue paper, placed in a crate, refrigerated at just the right temperature, and sent by railroad to a store so that someone may buy the apple and eat it.

**The Picking Life**

"I wouldn't say it was a hard life, but it was long hours." — Seth Harris

*For most of the year, cultivating apple trees on the typical 6-7 acre orchard was a family affair. But when the crop was ripe for picking, hundreds might join in the harvest. “Blacks, whites, and Indians... came to work on the farms,” recalled Doris Stewart Frye. “They might go from one farm to the next and work until all the work was done.”*

"Oh, they were plenty of foreigners," said Seth Harris. "They was families, and—oh, the darndest crowd." They earned about five cents per box, usually picking between 50 and 80 boxes of apples during a ten-hour work day. Harris, a bindlestiff who moved from job to job, remembers a personal best of 104 boxes.

The development of Washington's orchard industry created a market for specialized equipment, such as picking bags, smudge pots, and codling moth traps. Many of these were developed or improved by orchardists who were seeking a better way to raise and market their produce.

**Artifacts That Tell the Story**

*Apple Picking Bag, c. 1925*

The cords on the sides hold the canvas sleeve closed to form a bottom to the metal-sided bag. By releasing the cords, the picker can open the canvas and gently empty the fruit from the bottom, thereby minimizing any bruising. Bags with the Wells & Wade trademark are still being made and marketed in Wenatchee today.
**Smudge Pot, c. 1930**

By building smoky fires in smudge pots, growers could prevent their crop from freezing when the weather turned cold. Used at the Don Weythman Orchard in Monitor, Washington.

**Codling Moth Trap**, manufactured by E.F. Clipp of Wenatchee, Washington, c. 1930. Early traps, known as “Hootch Pots” were made of coffee cans filled with sticky apple syrup or a molasses and bran mixture. The number of trapped codling moths provided an accurate method for setting effective spray dates. This later version was filled with kerosene which when lit would attract the moths to the trap.

**Hand Truck, c. 1925.** The metal prongs at the base of the hand truck could be adjusted to move boxes of varying widths.

**Apple Parer and Corer**, manufactured by Goodell & Company, Antrim, New Hampshire, patented January 6, 1885. The first patent for an apple paring device was granted in 1803. Goodell & Company was a major producer of these machines which were marketed for home use.

**Apple Slicer, c. 1925**

Using the handle to push down on a whole apple, this device quickly slices the apple into six pieces. Once developed, in the early nineteenth century, the design of these slicers did not change dramatically over time.

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**LABOR UNIONS**

**STORIES OF THE LABOR FORCE**

"The Washington labor movement was seemingly born with an ax or shovel in one hand and a newspaper in the other." —Carlos Schwantes, Historian

**YOU ARE HERE: In the Office of a Union Newspaper**

There is no readership more avid than the workers of Washington. Feeling isolated, recent emigrants want to know about the world they left behind. Being in a land without rigid traditions, people dream about a better future. Enduring long hours under oppressive conditions, workers debate ways to change the world.

Ever since the Knights of Labor established the first reading rooms and published its first journals advocating social reform, the fortunes of workers’ publications have risen and fallen with the fate of social movements. One journalist nailed it when he wrote that this region “is full of germinal possibilities for radical thought.”

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**THE CHINESE MUST GO**

Many of the Chinese who had been brought to the Northwest to work on the railroads found work after the track was laid. But many Euro-American workers, including those who came west by train in search of prosperity, were unemployed. Some blamed the Chinese for the hard times.

The Knights of Labor helped organize a “Chinese Must Go” campaign in Seattle. Committee members ordered their expulsion on February 6, 1886. Under armed guard, 350 Chinese gathered at the steamship wharf. Funds were raised to pay for 196 to board the San Francisco-bound Queen of the Pacific. A mob harassed those who were unable to leave. Fighting broke out, and five men were shot. Governor Squire declared martial law in Seattle, and President Cleveland sent troops to restore order.

Just three months prior, nearly 250 Chinese residents of Tacoma had been forced out of homes and businesses and placed on a train bound for Portland, Oregon.
GENERAL STRIKE

The war was over, but the shipyards were still run by the government. When shipyard owners announced a wage cut, 30,000 shipyard workers went on strike. When the federal Emergency Fleet Corporation told the managers neither to negotiate nor make concessions, Seattle’s Central Labor Council, representing 110 locals, voted to strike in solidarity.

Thirty thousand more workers left their jobs. Factories, stores, and schools closed. Yet the strike committee maintained essential services. Hospitals stayed open. Milk, water, and power were delivered. Twenty-one special dining rooms served thousands of meals each day. Unarmed “labor guards” patrolled the streets. Not only did Seattle remain peaceful, its crime rate dropped.

The strikers’ motto was “Together We Win.” But after four days, with troops quartered in the city and the mayor denouncing the “revolution,” the nation’s first general strike came to an end. Some claimed moral victory. But neither wages nor work conditions improved. And Seattle’s shipyards were the first that the government closed down.

ANNA LOUISE STRONG: Radical Journalist

Anna Louise Strong began her career, which spanned half a century, as an advocate of children’s rights. Strong created traveling exhibits on behalf of child welfare organizations.

In Seattle, working on the staff of labor newspapers, Strong “found both comradeship and freedom...naturally mingled.” Seattle’s General Strike inspired her. As workers took over the functions of city government, she wrote, “We are undertaking the most tremendous move made by labor in this country.”

Strong became dispirited after the war when the closing of the shipyards plunged Seattle into economic crisis. “Workers fought each other for jobs and not the capitalists for power,” she recalled.

In the Soviet Union, where she worked for many years as a journalist, Strong’s search for comradeship came in conflict with her passion for freedom. Eventually she became disillusioned. Yet Strong refused to engage in anti-Soviet propaganda. “I’m reporter enough to know that there is no absolute truth,” she concluded.

DAVE BECK: Labor Tycoon

Dave Beck’s career began when he dropped out of high school to drive a laundry truck. Starting as a charter member of a Seattle Laundry Drivers local, Dave Beck rose within the ranks of the Teamsters Union. It was said that he organized everything on wheels.

Unionism for Beck was not a social cause. It was a service whose purpose was to maximize profits for business and labor alike. To combat business fears of labor radicalism, Beck preached the virtues of free enterprise to Chambers of Commerce. He usually opposed the use of strikes, preferring to work with managers for efficiency and stability. By refusing to provide transport services, Beck was able to shut down businesses that refused to cooperate.

Beck gained the support of businessmen for the American Federation of Labor by opposing the militant Congress of Industrial Organizations. As the nation’s most powerful labor leader, he did more than anyone to bring the labor movement into the mainstream of corporate America.
THE KNIGHTS OF LABOR

All producing workers should unite, proclaimed the first nationwide industrial union, the Knights of Labor (KOL). Its broad appeal suited Washington’s roving work force. Calling for an eight-hour day, equal pay for women, and the elimination of child labor, the Knights found recruits among miners and timber workers.

Although the union opposed discrimination against African Americans, it built support by leading anti-Chinese agitation. Workers blamed the hard times following completion of the Northern Pacific Railway on the low-wage Chinese workers. In Seattle the Chinese expulsion movement resulted in mob violence and martial law.

A series of strikes against mining companies led to the collapse of the KOL. When Roslyn miners struck to obtain a wage increase, an eight-hour day, and safety in the mines, Northern Pacific Coal brought 400 African American workers from the Midwest to replace them. The strike failed, and the labor activists left town.

ARTIFACTS & EPHEMERA THAT TELL THE STORY

IWW Stickerette. Members of the IWW (Industrial Workers of the World) would glue stickerettes to posters as a signal that they were present in the work place. The black cat and wooden shoes or “sabots” [sabotage] were IWW symbols.

IWW Lapel Pin, c. 1920. Identification as a member of the IWW could result in the loss of work and sometimes physical harm.

IWW Stickerettes, 1915–1940
Stickerettes were written and designed by IWW artist members.

Trade Card. Loyal Union members were expected to purchase goods produced by Union labor.

Union Ribbon. United Association Journeyman, Plumbers, Steam and Gas Fitters, Local No. 32, Seattle, Washington, 1932. The ribbon has two sides, the black side would have been worn at a member’s funeral.

Hand-made Sign. The local Union Hall often had a Reading Room and sponsored educational and political lectures in the evenings for its members.

Lapel Pins
Shingleweavers’ Union, American Federation of Labor, c. 1920
Building and Construction Trades Council, Tacoma, 1943
Photographer’s Association of the Pacific Northwest, Tacoma, 1904
Newsboy’s Union, Seattle, 1918
Building Materials Chauffeurs, Teamsters, and Helpers Union 786, American Federation of Labor, July 1934
International Brotherhood of Teamsters, Chauffeurs, Stablemen, and Helpers of America, 1920
Boiler Maker, Shipbuilder, Blacksmiths, Helpers, International Local 104, September 1918
American Association of the Street and Electric Railway Employees of America, 1918
SPRUCE ARMY DIVISION 53

SOLDIERS IN THE SPRUCE

Towers of Power

Air power was needed to end the deadly stalemate on the battlefields of Europe. The United States was capable of building enough aircraft to help win the war. But to do so, U.S. industry needed to harvest the Sitka spruce of the Pacific Northwest. Spruce was ideal for airplane construction, being lightweight with straight-grained pieces for wings and fuselage, and high tensile strength for propellers. Great virgin stands of spruce existed, mainly in remote mountain areas. With the war requiring ten million feet of aircraft lumber a month, these stands had to be logged and the logs moved through trackless terrain to the mills before the planes could be built.

Wobblies in the Woods

The lumber industry was the stronghold of the IWW. Meeting in Spokane a month before the U.S. went to war, Wobblies demanded an eight-hour day, higher wages, and sanitary conditions in lumber camps. Although timber profits were rising, the companies refused to negotiate. Forty-thousand men went on strike, closing down most of the mills on the West Coast. Public pressure against wartime strikers mounted. IWW members were denounced as German agents. Vigilantes beat them up, and police threw them in jail.

Finally loggers returned to work, but with a new tactic: “striking on the job.” Undercutting the production of lumber, their acts of sabotage, inefficiency, and walk-outs after eight hours underscored the Wobblies’ demands.

The Spruce Army

In order to log spruce needed for aircraft, the Army sent 25,000 soldiers into the forests to work alongside civilians. It also formed a wartime union: the Loyal Legion of Loggers and Lumbermen (4L). Timber companies that had refused to deal with organized labor granted an eight-hour day, higher wages, and better camp conditions to the 4L. Wobblies and AFL organizers were banned, but many joined, simply hiding their union cards. At logging camps, lumberjacks and soldiers saluted the flag before felling spruce trees. By war’s end the Loyal Legion had grown into a work force of 100,000 men, and the Army had built its air force.

Artifacts that Tell the Story

Vought VE-7 Airplane Wing, c. 1920

This type of airplane wing is typical of the style of wooden airplanes made during World War I. Spruce from the Northwest with its long, straight grain was the wood of choice for airplane construction and was consequently shipped throughout the United States.

4L Buttons and IWW Sticker

All mill and logging camp employees had to become members of the 4L and sign a pledge vowing not to strike. During WWI, “Wobbly” timber workers wore 4L buttons and concealed their outlawed IWW buttons. But they put little IWW stickers everywhere they could.
SHIPBUILDING

WARTIME BOOM

"The only machine in the shipyard was a grindstone. Everything else was done by hand."
—C. Bunday

BUILDING THE "WONDER SHIP"

YOU ARE HERE: Aberdeen, Grays Harbor

Near forests of Douglas-fir—light, strong, and abundant—the best timber for shipbuilding; in a region whose eleven mills can produce two million board feet in a week; beside a harbor where needed materials can come by ship and by rail, whose deep waters are ideal for launching; the race is on. To win the Great War and set a world’s record, crews work in jig time constructing the SS Aberdeen.

The U.S. Navy’s Emergency Fleet Corporation has challenged the Grays Harbor shipyard to prove it is the most efficient in the world. An industrial army has assembled to build a ship that will transport troops across the Atlantic to fight in Europe. Like a general, the shipyard superintendent commands and coordinates the divisions of clerks and purchasers, bandsaw workers and planers, framers and joiners, shipwrights and fasteners, carpenters and calkers, blacksmiths and boilermakers, machinists and copper smiths, plumbers, pipefitters, and painters.

After the keel is laid in ten seconds, each crew, working 7½ hour shifts, compete with the next to set the pace. No sooner is the framing in place than the hull is laid, with joiners selecting beams for each beveled rib.

Like factory workers, they follow a standardized design. Like soldiers, they move in lockstep rhythm. The sound of hammers and adzes fills the air. And in only 17½ days, a new world’s record, this 290-foot, 4,000-ton steam-driven vessel is ready to be launched.

WOMB OF THE WAR FLEET

YOU ARE HERE: Aberdeen, Grays Harbor

With the U.S. a combatant in the Great War, the Pacific Northwest becomes a strategic asset. Germany’s sinking of allied shipping has raised Washington’s shipbuilding industry high on the horizon.

Having commandeered the nation’s shipyards, the Emergency Fleet Corporation is ordering a thousand ships, three hundred from the Northwest alone. Within a year, Washington’s boat-building industry has outgrown every other except lumber. The exemption of shipbuilders from the draft has brought an influx of workers. And the rising tide of war construction has lifted related industries, like milling and machine tools.

Its sheltered harbors and prodigious forests put Puget Sound at the center of the war effort. Seattle’s 28 shipyards are building one in four of the nation’s new ships. One of these companies, Skinner and Eddy, is building more boats than any other yard: 57 steel cargo steamers.

One observer, Hubert Wells, describes the scene at Skinner and Eddy as “a wilderness of strange machines, whirling belts and belching fires. Ten thousand men... shout to be heard above the din.”

There are casualties on the homefront. At times the scream of an ambulance siren can be heard above the noise of blast furnaces and steamhammer blows.

Wageworkers Frontier VOCABULARY 1

BINDLESTIFF
Seasonal workers who moved from job to job, carrying their possessions wrapped in a blanket roll tied with twine.

These bundles became symbolic for the rootless labor force, who were called bindlestiffs. The term probably originated from German migrating workers. “Binden” in German means to bundle or bind.

GRAIN
Wheat, oats, and barley are all grains grown in the Northwest; wheat being most commonly grown in the Palouse region. Grains may be ground into flour to make bread, etc.

MULE
A cross between a female horse and a male donkey, and bearing characteristics of both, such as the long ears of the donkey and the body of a horse. Mules were used in the Northwest as pack and draft animals.

SHINGLE
A small, thin piece of building material (commonly cedar in the Northwest), with one end thicker than the other. Used for roofing or siding buildings.

FISH WHEEL
A large revolving wheel to which scoop nets are attached. The wheel may be suspended in a river or from a boat. The fish are caught in the nets as they pass beneath the wheel.
MATTHEW STROMMER’S TOOLBOX

Matthew Strommer’s toolbox, like those of other shipwrights, contains many standard woodworking tools and some specialty tools. These tools are often variations on older tool styles that have been changed to meet the specific needs encountered in wooden shipbuilding. Strommer began his career in the Oregon Coast shipyards and moved to Aberdeen in the 1890s. Most of his tools were manufactured between 1885 and 1925. The following is a sampling of Strommer's tools included in the exhibit:

SHIPWRIGHT’S TOOLS

Hand saw
Hack saw
Breast drill and Single Twist Bit
Wimble Brace and Single Twist Bit
Sheet Metalworker’s Snips
Try square
Ratchet Brace and Single Twist Bit
Shipwright’s Adze
Compass Plane
Adjustable Beading, Rabbet, and Matching Plane
Gouges
Slick
Firmer Chisel
Lathing Hatchet
Spokeshave
Planes

THINK ABOUT IT

In 1880, the most common material used to build ships was wood.

- What products are used for ship and boat building today?
- Why has the industry adopted these new materials?
FISHING & CANNING

ON THE COLUMBIA RIVER

WHERE ROYALS RUN THE GAUNTLET

Between Astoria and the Cascades: Glistening, multitudes of salmon gather at the mouth of the Columbia. After a journey of five years and thousands of miles through the Pacific, the Royal Chinook have returned to their river of origin. They linger, readapting to fresh water, then head upstream to their spawning grounds: the streams and creekbeds where they were born.

As they swim deep channels and leap rapids along the way, these five-foot Chinook run a gauntlet of devices designed to capture their rich, red oily flesh for human consumption. Seine nets, set near the river’s mouth and dragged to shore by horse teams, surround scores of salmon. Gillnets, placed by men in small boats, stretch hundreds of feet across the river. Below Celilo Falls, where water roars between basaltic cliffs, Indian fishermen, perching on wooden platforms, reach out with dip-nets to scoop salmon from pools or intercept them in mid-leap.

Men have blasted openings though the rock to force the river’s flow toward giant fish wheels. Turning several times a minute, each dip of the wheel scoops up tons of wriggling spawners. Other fish wheels, floating on scows, reach deep into river channels where salmon run.

Downriver locals call these Royals “June hogs” for their size — ranging from thirty to eighty pounds — and the numbers slaughtered. Fortunately enough escape every year to reproduce their kind along the thousand miles of tributaries that extend north beyond the Canadian border. Next June the Royal Chinook will gather once again at the mouth of the Columbia.

TO SAVE THE SALMON

The men who fished and canned on the Columbia had their differences. The fishermen, who were paid by the pound, at times competed over the placement of nets. In the canneries, semi-skilled whites earned $4 per day while skilled Chinese received no more than $1.50. But the workers were united in observing a halt to the fishing season at the height of the run. Each year, starting at noon on August 25th, fishing stopped. For two weeks the salmon were allowed to escape the nets and knives, journey upriver, and spawn.
WHERE EVERY MAN TENDED HIS OWN BUSINESS

"In those days the relationship between Indians, Chinese, and whites was very clear-cut. Each man tended to his own business and didn't interfere with the rights of others. The Indians all stayed at the Indian camp, the Chinese all stayed down at the China house, and the whites all stayed at the white bunk house. None of the whites was ever permitted to go down with the Chinese, and of course the Chinese never came up around the whites. And the whites were never permitted around the Indians. It was always assumed that a white who went down around the China house or around the Indians was only looking for trouble, and no one permitted any of the whites to go down and bother the Indians or Chinese in any way."

— From Francis Seufert's memoir, Wheels of Fortune

FISHING FLIPBOOK EXCERPTS

* Many kinds of salmon came home to the Columbia and its tributaries. The blueback was a member of the sockeye or red salmon species. There were silverside and steelhead as well. But the most plentiful was the Chinook, of which the June-running Royals were the biggest and most prized.

* Columbia River Indians traded fish to inland tribes and to explorers, fur-trappers, and settlers. Between 1866, when the first commercial cannery started on the Columbia, and the 1880s, when Scandinavian and Finnish immigrants began gillnetting, most of the fishermen were tribal members.

* Until the 1880s, almost all of the state's canneries operated along the Columbia. The work was done by seasonal laborers. Slavs, Scandinavians, and Chinese worked side by side between May and November. The canneries were small and mobile, following the fishermen to areas where the catch was abundant.

* The canning industry became mechanized, with men on assembly lines sorting and cleaning fish, "Iron Chinks" butchering salmon, and other machines making cans, filling them, and soldering the lids. A cannery could process 50 tons of fish a day. As canning factories became more efficient, the demand for fish intensified.

* By the mid-1930s few steelhead remained in the Columbia, silversides had disappeared, and the blueback salmon, which spawned in lakes near the upper Columbia and Snake rivers, was extinct. Logging and over-fishing contributed to the Royal Chinook's demise, but they were "wiped out and destroyed," wrote Francis Seufert, "when the federal government built Grand Coulee Dam."

CANTONESE SPOKEN HERE

* When Francis Seufert opened a new cannery at The Dalles in 1896, the manual labor was done by Chinese men. "The Chinese," recalled Seufert, "did all the butchering of salmon, the sliming, filling of cans, sealing of cans; they put them in the retorts and took them out, stacked them in the warehouse, put on the labels, put them in boxes, and loaded the boxes on freight cars."

* Hired by a Chinese grocer who supplied them with food, the men came from Portland on a passenger train, worked from April to October, then returned to the city.

* After 1918 women entered the canneries in large numbers, replacing men who had gone to work in shipyards and lumbermills. "The girls packed the fish and the fish was all packed by hand," recalled Floyd Chandler. "There was an awful lot of girls that worked there in the fish industry."

ARTIFACTS THAT TELL THE STORY

* **Iron Chink, c. 1910**

The Iron Chink, first used in Fairhaven (Bellingham), Washington in 1903, has a series of rotating knives and brushes which decapitates, slices open, and guts the salmon at a rate of one per second. The machine was referred to as the Iron Chink.
by white cannery workers because it replaced many highly skilled Chinese who worked as "slimers."

**Canning Labels**
The salmon was cooked after it was packed in the can. A vent hole was left in the top of the can which was placed in a vat of water for cooking. After the first cooking, the vent hole was sealed with a drop of solder and then the can was cooked a second time.

**Salmon Labels, 1900-1930**
Chromolithography was the primary printing process for salmon labels from 1890 to 1925. In this process, the design was engraved onto a series of stones, one for each color to be printed. The cans were lacquered to prevent them from rusting, but many canneries found that labels with a red background hid rust marks.

**Flattened Tin Cans**
Early tin cans were handmade in the cannery by rolling tin, soldering the seam and attaching the top and bottom with solder. After the process of making cans became mechanized in the late 19th century, many canneries received cans in bulk which were flattened for easy shipping.

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**LOGGING**

**RIVER PIGS & BULLWHACKERS**

**Bringing Down the Giants**

Taking trees from Washington's western forests is a job for Paul Bunyan. The dominant species — hemlock, spruce, redcedar, and Douglas-fir — are gargantuan compared to back East.

Early loggers realized that the trees' great size and the uneven terrain on which they grew required inventive forestry techniques. New technologies were initiated and old ones adapted for these forests. On level terrain, ox teams pull massive logs along greased skid roads. From timbered slopes the steam donkey, a mobile engine spooling a steel cable, pulls felled trees half a mile at a time. And high wires with block and tackle hoist wooden giants through the air.

**New faces in the forest**

Loggers are men on the move. Low fares west and the promise of abundant work at good pay brought them to the Northwest. Once here, they go from job to job, staying, on the average, two to four weeks. One rarely sees a familiar face in a work camp, so many men are passing through.

It is easy to recognize an experienced timber beast. His boots are worn, and he carries his things in a pack sack. He is dressed for cold, wet work, from his wool coat to his wool underwear. And he knows the camp rules: no liquor, no weapons, no conversations at mealtimes.
We Are Loggers

"The men who worked in the woods called themselves not 'lumberjacks,' or 'timber beasts,' but 'loggers.' If they were management—operators—they were known as 'boss loggers.' The boss loggers referred to the crews working for them as 'the men.' The men called themselves 'rigging men,' 'fallers,' 'bull cooks,' or whatever, by the job they worked at. But they were all 'loggers,' not 'lumbermen,' a term which referred more precisely perhaps to millhands and was thus a word to avoid. The loggers considered millhands proletarians—'wage slaves'—unfortunates tied to drab jobs, town-dwellers who had married and settled down. Contrariwise, the loggers felt themselves to be free souls."

—Andrew Prouty

There are many kinds of work to do, depending on a man's experience, daring, and need for money. Many a boy starts out as a skid greaser at $35 a month. For driving logs in the river, which takes skill and courage, the monthly paycheck is $90.

Once a logger collects a paycheck he may quit. He is likely to spend his money on "soiled doves" or in the saloons. When he needs work, a labor contractor in a tavern will send him to his next lumber camp.

You Are Here: In an Everett Shinglemill

Timber is the biggest business. Half of the work force has a job in the forests and mills of the industry. Washington sells more wood products than any other state.

Some wood is used locally to make fruit crates and ships, railroad ties and mine props. Most of it is shipped to California, Hawaii, China, and Australia or goes eastward by rail.

A major export product comes from redcedar. Around Puget Sound, mills are cutting this towering conifer into shingles. Some operations are small, with merely a few saws under a roof. This Everett mill is one of the top producers.

Each sawyer can make 30,000 shingles in a ten-hour shift. Every day this mill, which employs more than 150 men, turns out millions of shingles.

It is dangerous work. To cut shingles, one pushes blocks of wood through a sharp blade that spins two hundred times a minute.

Most sawyers have lost at least one finger. Many have suffered more serious injuries. Yet the mill owner does not put safety guards on the saws. He knows that the shingle weavers will continue to work with them. Few other jobs are available for men with damaged hands.

These workers have organized. The International Shingle Workers Union is Everett's largest. Mill owners do not recognize the union and refuse their demands. Yet strikes have forced them to adopt a working agreement. Shingle weavers get paid $4.50 a day, twice as much as a lumber mill worker.

Artifacts That Tell the Story

Boom Chain
Made by Crown Zellerbach, c. 1920. Boom chains were used to lash logs together for transport down waterways to the mill.

Oil Lamp
Similar in style to lamps used in coal mining, the top of this lamp can be removed to add fuel, and the wick extends from the spout.

Yoke
Made in the blacksmith shop of the Panhandle Lumber Company, c. 1910. This yoke was used by waterboys who carried buckets of drinking water to crews working in the lumber yard.

Falling Axes
Loggers used falling axes to chop the undercut when felling a tree and to cut a deep, narrow hole to accommodate the end of their springboards.
Broadax
The large blade has a beveled side to square off the edges of timbers.

Two-handed Crosscut Saw
Long crosscut saws were handled by two fallers, one cutting left-handed and the other right-handed. The narrow teeth of the saw cut the wood while the wide rakers pulled out the sawdust. Shorter, one-handed crosscut saws were used by buckers to cut the felled tree into 16–40 foot lengths.

Springboard
For especially large trees, fellers carried two springboards each which they used to work their way up the tree. Standing on one springboard, the faller would use his falling ax to cut a hole for the other springboard. The plate at one end of the springboard has a sharp edge which would embed into the top of the hole to hold it in place.

Calk Boots
The logger relied on the metal calks (pronounced “corks”) to dig into the wood of a springboard or log to maintain his footing.

Wedge
Fellers drove wedges into their “kerfs” or sawcuts to help them control the direction in which the tree fell.

Tree Plates and Wedge
A wedge, centered between two tree plates and driven into a sawcut, lifted the tree toward the undercut so it would fall.

Oil Bottle
Generally made out of an empty whiskey bottle, the logger kept his oil bottle nearby to sprinkle on his crosscut saw to counteract the effects of pitch and resin from the tree. The sharp metal hook allowed the logger to hang the bottle in a tree near where he was working.

Timber Cant
Two men could use the tongs to grasp heavy logs. Also known as skidding tongs, these were used in constructing a skid road. Several pairs of tongs (each being held by two men) were used to lift 8–10 foot hemlock logs and move them into place.

Stamp Hammers
Brands were used to identify logs once they had been merged with other companies’ logs for transport to the mill. Each owner had a unique mark known as a log mark or brand mark. To brand the logs, the reverse edge of the hammer head was struck to pound the mark into the log.

Wageworkers Frontier MILESTONES

1886
Coal mining town of Roslyn founded; Mine operated by the Northern Pacific Coal Company

1900
Frederick Weyerhaeuser sets up a logging business in western Washington

1902
Reclamation Service begins irrigation project in Yakima and Okanogan valleys to facilitate farming

1903
Iron Chink fish cleaning machine invented by Seattleite Edmund A. Smith

1909
Alaska-Yukon-Pacific Exposition held in Seattle to showcase the Northwest’s setting and bounty of natural resources

1914
Finnish immigrant Oscar Wirkkala popularizes the “spar logging” technique

1914-1918
World War I

1917
Spruce Army originated

1919
Seattle general strike; labor violence in Centralia

1933
President Franklin D. Roosevelt begins New Deal programs; Grand Coulee Dam on the Columbia River begun

1939-45
World War II