

THE HARBOR OF REFUGE!

A Commercial Necessity

OFFICIAL REPORT OF THE SURVEY OF PORT ORFORD!

EXAMINATION OF PORT ORFORD HARBOR, OREGON.

UNITED STATES ENGINEER OFFICE, Portland, Or. Sept. 23, 1878.

GENERAL: I have the honor to transmit herewith a chart of Port Orford Harbor, Oregon, and to submit the following report of an examination made by me in accordance with the act of Congress approved June 18, 1878.

OBJECT OF THE EXAMINATION

The object of the examination of this harbor was "to ascertain its adaptability for a harbor of refuge."

I left Portland, Oregon, on the morning of September 2, 1878, for Port Orford, 330 miles distant, reaching the latter place on the evening of September 4, the journey requiring three days.

I fortunately had a fine opportunity to judge of the capacity and availability of the harbor, as I entered it from the Pacific Ocean during a north-west gale, and our vessel anchored in 7 fathoms, opposite "Battle Rock," in smooth water.

I remained two days at the harbor, during which I made a careful examination of it and its surroundings, and conversed freely with all parties who were acquainted with its general character and the force and direction of the seas from which it needs protection.

DESCRIPTION OF THE HARBOR.

Port Orford, the most westerly port of the United States south of Alaska, is situated on the western coast of North America, in latitude 42 degrees 44 minutes, longitude 124 29 minutes, and according to the Coast Pilot of Oregon, published by authority of the Coast Survey, is by far the best summer roadstead on the Pacific coast between Los Reyes and the strait of Fuca.

The harbor is deep and capacious, and is formed by a headland boldly jutting out into the sea, nearly vertical on its water face, the portion forming the shelter from westerly gales attaining an altitude of about 350 feet; from the outer point the ground slopes gradually down to an elevation of about 60 feet above low water, near the northern part of the bay, opposite which the town of Port Orford is situated.

The survey made by the Coast Survey, and plotted on their chart, is reported as follows by the Coast Pilot: "From the extremity of the southwest point eastward to the main shore the distance is two miles, and from this line to the greatest bend of the shore northward the distance is one mile."

"The soundings within this space range from 15 fathoms close to Tichenor's Rock, forming the southwest point of the bay, to 3 fathoms within one-fourth of a mile of the beach on the northeast side, with 5 fathoms at the base of the rocky points on the northwest side toward Tichenor's Rock; one mile of the shores of the bay the average depth is about 14 fathoms, regularly decreasing inshore."

From my own examination and all the information I could collect, I find the bottom of the harbor to be of sand and mud, presenting a good holding-ground, and that there are no sunken rocks or hidden reefs to endanger vessels after getting inside the head. It is said that northwest fog-seldom, if ever, enter the roadstead, which gives it, consequently, a great advantage over other harbors on the coast south of the Columbia River.

From my own observation I am led to believe this is so. While off the coast, between Cape Arago and Port Orford, a dense fog enveloped the shore; but when we reached Cape Blanco this seemed to veer off Cape Orford, and we entered the harbor where it was perfectly clear. On the following day, while examining the coast north of Orford on shore I found a dense fog enveloping Cape Blanco, seven miles north, while at Port Orford it was perfectly clear and pleasant.

TIDES.

The mean rise and fall of tides is 5.1 feet; of spring tides, 6.8 feet; and of neap tides, 3.7 feet.

DANGER IN ENTERING THE HARBOR.

Between Port Orford and Cape Blanco, and about 3 miles off the coast, there is a group of rocky islets and sunken rocks called Orford Reef, which renders the approach to Port Orford from the north somewhat dangerous; there is, however, a good wide ship-channel between this reef and the main shore.

GENERAL REMARKS.

In reference to the present condition of the harbor during winter gales the Coast Pilot notifies mariners as follows: "In winter, anchor far enough out to sea when a southeaster comes up during a protracted gale in December, 1851, a terrible sea rolled in so that no vessel could have ridden out."

"The old steamer Seagull was driven northward, and lost two weeks in regaining her position, and the mail steamer Columbia hardly held her own for many hours off Orford Reef."

Since completing the foregoing I have received a very able and interesting communication from Captain William Tichnor, an experienced sailor and old resident of Port Orford upon the great stream setting from the Japanese Islands northeast to the northwest coast of America, and its effects and changes on our shore line in eddies, shoals, drift sands, &c.

After a careful examination of this subject I beg to report that, in my opinion Port Orford is a very available point for a harbor of refuge. It is easily accessible, occupies a position nearly midway between San Francisco and the strait of Fuca, presents a deep and capacious roadstead, offering secure anchorage from gales from all points except south, southeast, and southwest; is not subjected to north-west winds, has no shifting sandbars or hidden reefs within its limits; the land around is high and prominent, and presents all the necessary materials, easily accessible, for a stone breakwater. All that is now needed to make it a secure harbor of refuge at all seasons is a breakwater, behind which vessels can ride safely at an anchor during gales coming from the southeast, south, and southwest, from which it is not already protected by nature.

A careful examination of the chart of the currents and the general direction of the gales leads me to the conclusion that a breakwater about 5,000 feet long, running from the outer point of the head toward Coal Point, would give ample protection to a large fleet during the heaviest gales; for present purposes 2,000 feet would be sufficient, and this could be extended whenever it became necessary. A breakwater 5,000 feet long would secure a harbor of about 300 acres, with a depth of from 4 to 12 fathoms outside the three-fathom curve, while one of 2,000 feet in length would secure an available anchorage of about 80 acres with the same depth.

The plan of breakwater recommended is that proposed by the board of engineers for the Pacific Coast and described in their report of February 14, 1877, as follows: "We propose to build the base of any breakwater up to the height of 15 feet below the level of low water of small stone, that is to say, of such stone as any quarry will furnish, and while quarrying out this great mass to lay away all large stones of 5, 10, or 20 tons for the construction of that portion of the breakwater from 15 feet up to low water. Upon this foundation we propose to build a masonry wall, faced with granite, 25 feet wide and 20 feet high, including the foundation, protecting the seaward side by blocks of artificial stone (if natural stone cannot be obtained) of large size, (20 to 30 tons each), and thoroughly paving the harbor side with large blocks of granite to receive without displacement the water that will be thrown over the wall in great storms."

I think this breakwater should be connected with the headland, and that the United States should purchase so much of the head as will be necessary for the works of defense after the harbor is completed, and for stone quarries, buildings, &c., for the construction of the breakwater. The proposed breakwater of 5,000 feet is estimated to cost as follows:

108,333 cubic yards of ashlar masonry, at \$18.....\$1,950,000  
70,000 cubic yards of rubble masonry, at \$9.....630,000  
295,000 cubic yards large stone, at \$5.....1,475,000  
2,247,500 cubic yards small stone, at \$2.....4,495,000  
Contingencies, 10 per cent.....855,000  
Total.....9,405,000

A breakwater 2,000 feet long is estimated to cost as follows:

45,333 cubic yards ashlar masonry, at \$18.....\$780,000  
28,000 cubic yards rubble masonry, at \$9.....252,000  
118,000 cubic yards large stone, at \$5.....590,000  
747,000 cubic yards small stone, at \$2.....1,494,000  
Contingencies, at 10 per cent.....311,000  
Total.....3,427,000

GALES.

The prevailing winds on the coast from November until April are from the south and southwest; in May they veer around to the north and northwest and continue from that direction until about October; the gales mostly dreaded by mariners are from the southwest and are at times fearful in their severity; on the whole of this northwest coast between San Francisco and the strait of Fuca, a distance of 750 miles, there is no harbor that a sailing vessel will attempt to enter during a southwest gale.

A harbor of refuge is absolutely necessary, and nature seems to have indicated that Port Orford by its location and natural advantages should be selected for man to complete, and thus present a safe harbor to which mariners can run for shelter in any gale.

Port Orford is in the collection district of Southern Oregon; it is no longer a port of entry. In the range of hills in the rear of the harbor there is said to be an inexhaustible supply of coal, and between the town and the Coquille river there are forests of the best cedar timber.

The nearest port of entry to Port Orford is Ellensburg at the mouth of the Rogue river, about 25 miles south of the harbor. I was unable to learn what, if any, revenue was collected at Ellensburg during the last fiscal year.

The nearest lighthouse is on Cape Blanco, 7 miles distant, and the nearest works of defense are at the mouth of the Columbia River, about 220 miles distant.

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whole subject, and gives his opinions as to the effects upon our coast, from Cape Mendocino to the strait of Fuca, and particularly at Port Orford. I quote from the closing portion of his letter as follows:

"Port Orford has the following advantages: It is the central point between San Francisco and Puget Sound; it is the most western harbor on the coast, and it is therefore not liable to calms; it is exempt at all times from black fogs, and it is very seldom visited by gray or calm fogs; it is the most capacious roadstead on the coast, and large enough to accommodate our rapidly growing commerce for all time to come; it is exempt from all sunken dangers, either in or out of its approach; it is shielded from all danger of being filled with drifting sands; it has the very best holding ground of any roadstead upon the coast, composed of sand, loam and decomposed slate; it affords immediately at hand all the material, and of excellent quality, for any improvement desired."

"Its approaches are unsurpassed, having on the east of the harbor a prominent sugar-loaf mountain of eighteen hundred feet altitude, laved by the waters of the bay, and four miles east of this mountain another, with an altitude of twenty-three hundred feet, thus presenting to the navigator landmarks that cannot be mistaken in approaching the shore. The country in the interior is undoubtedly as rich in resources as any portion of our coast, with inexhaustible deposits of coal, iron, copper, silver, and gold, extensive bodies of timber, and fertile valleys, all teeming with nature's riches, but, like the major portion of our iron-bound coast, destitute of a place of shipment."

"At the same time, important as are these internal resources, they should be considered but secondary to the great commercial demand for a port of refuge for the safety of the lives and property engaged in our coast traffic. We have only to refer to the said detail of the sacrifice of life and property during the last winter, to raise our voice in prayer to the Government to look to our safety. All shipmasters on this coast, those commanding our magnificent steamers as well as sailing vessels, unite in recommending Port Orford as the place adapted for an improvement of this kind."

A chart of Port Orford, showing proposed breakwater and the direction of the heaviest seas and currents, is transmitted.

I am, General, very respectfully, your obedient servant,  
JOHN M. WILSON,  
Maj. of Eng. Brc. Col. U.S.A.  
Brig. Gen. A. A. HUMPHREYS,  
Chief of Eng. U. S. A.

CARE FOR YOUR PASTOR.

First of all let every church begin the work of 1879 by resolving to give its pastor a united and just support, and by support we mean not merely efficient aid in church work, but such a salary as shall make it possible for him to live comfortably, and joyfully to give his whole time and strength to his work. This is the first duty of every church. We would be the very last to discourage liberal giving for missions and all other necessary benevolent objects, but a church that gives its money for such purposes and leaves its pastor in want is as culpable as the father who should give his children's bread to strangers. Both things ought to be done, but the pastor ought to be provided for first of all. Charity extends at home, though it should extend to the ends of the earth.

Not only is it the duty of a church to provide well for the pastor, but an enlightened self-interest would dictate the same course. A business man who wants his interests well looked after pays his employes a fair salary, and considers it poor economy to do otherwise. So it is the poorest kind of economy for a church to neglect to make proper provision for its pastor's support. No man can study well or preach well or do pastoral work well unless his heart is free from anxiety about his daily bread. If he is obliged to give his mind to the question how he shall keep the wolf from the door; if he can not look the butcher and the grocer squarely in the face because his bills are unpaid, and he has no prospect of paying them; how can he be expected to do anything but half-hearted work? So we say to the churches, if you want your pastor to look after your interests well, do you look after his.

Another thing: pay the pastor promptly. A salary of \$1,000, paid promptly in installments, as agreed on, is worth \$1,200 paid irregularly. A cash buyer always gets the lowest prices, and can therefore live on less than the man who lets his bills run weeks or months before payment. See to it that your pastor is able to pay cash, or has a credit as good as cash. If his last year's salary is in arrears, now is the time to make it up. This is the holiday season, when even the crabbest are genial and the stingy generous. Make your pastor's heart glad by paying him what is due him to the uttermost farthing. Then take account of ways and means; and whether his salary is raised by subscription or pew-rents, see to it for the future that he is paid promptly. It will do your own hearts good, and cheer his more than you can tell. Any church that pursues this policy will find its aggressiveness and its power doubled.—Ex.

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Labor, Money and Transportation.

ED. GAZETTE: Human prosperity, and the material and intellectual development of society are promoted through the production and distribution of wealth. Before the resources of nature can contribute to the prosperity and development of society, they must undergo, 1st, a change of form, 2nd, change of location, 3rd, change of ownership.

The first is accomplished by labor, the second, by transportation, and the third, by money. In the morning of civilization, when labor was unskilled, and unaided by machinery; when the absolute necessities of life in their most limited, crude and rude form occupied nearly the whole time of man in their production, exchanges were few, but limited transportation facilities were necessary, and there was but little need or use for money.

What exchanges were made were mostly in kind—one kind of products exchanged for another, while the raft and the pack-mule were the principal modes of transportation. As skill increased and machinery took the place of bones and muscles, increasing the quantity, quality and variety of products to meet the demands, needs, tastes and luxuries of a higher social development, the pack-mule had to give way to the wagon, and the raft to the canal and keel boat, and a medium of value exchange became necessary in place of simple barter.

For this purpose, society selected the so-called precious metals, as they possessed value in small compass, and comparatively light weight and from their divisibility into very small portions, and their capability of reunion or restoration to larger bulks and values without loss.

Still this was nothing but barter—an exchange of value for value. But it was the best the age could produce—as private credit was unknown—and no government possessed sufficient stability to give its credit currency even among its own subjects.

The three changes necessary for nature's resources to undergo before they impart their blessings to man, form, location and ownership, for no man can produce all he needs, any lack of facility or means, to effect either one of these changes effectually blocks and obstructs the other two. Lack of labor or production deprives transportation of business, money of use, and society of blessings. Lack of transportation facilities, slackens and cheapens production, and produces high prices and a death in the market. Lack of the medium of value exchange produces stagnation all along the line, prevents both production and transportation, throwing labor and machinery out of employment, and opens the door wide to crime, vice and moral degradation. The era of hand-work, the pack-mule, and simple barter gave way to the wind and water wheel, the canal boat and stage coach, and gold and silver.

During this era, but little comparatively was produced, the needs of man were few; no individual or nation had sufficient credit to get large in debt; but little money was necessary and the precious metals were ample to perform its functions. In 1696, \$12 would buy a horse in England. A pound of silver was eight pence shillings, or about \$4 15, now we make \$16 of it, and England makes 66 shilling of it.

In the wilderness of Judea, eighteen hundred years ago, the disciples estimated that 200 pence, equal to about \$30, would give a square meal to 5,000 hungry people—costing but three-fifths of a cent each. (See Mark 6:37). Then came the era of steam, by the aid of which one man could perform the labor of ten or a hundred. Production increased rapidly, and the labor that was thrown out of employment by machinery, must seek employment in extending and multiplying the varieties of products. This stimulated inventive genius, cultivated a higher order of taste and refinement. A better class of buildings and furniture took the place of old. Better and finer clothes, carriages, equipments, books, musical instruments and works of use and ornaments, were then supplied to meet the growing demands of a higher civilization and social culture.

Thus were the changes of form greatly facilitated and the possibilities of production increased. This demanded a corresponding increase in the facilities for transportation and distribution. The locomotive took the place of the horse—the iron rail of the wagon road—and the steamship of the canal boat. So far no legislative obstructions interfered with the march of improvement. No monopoly could control the inventive genius of the laborer, or the enterprise and energy of the men of trade and commerce. Labor, machinery, steam power and genius found among the growing and developing wants of

society ample demand for the products of their full employment.

Transportation, by means of steam, afforded every necessary facility to distribute with economy and dispatch all the products of labor to far and near consumers. An ample medium for the value—exchange of these greatly increased products was all that was lacking to produce a condition of material prosperity, social refinement, intellectual development and moral grandeur, never before attained by man. The barter system was wholly impracticable. The gold and silver medium became inadequate—from its limited quality—and not until the credit of England, from 1797 till 1822, that of the United States, 1862 till 1873, and that of France while reaping from the losses by the German war, were coined into substitutes for the precious metals, was the third medium formed, exactly adapted to meet the demands of the highest civilization. But here we meet opposition. The love of power, the ambition for superiority and position, the selfish greed of man to control an undue share of the blessings and privileges of earth, have arrayed the monopolizers of the precious metals against human prosperity, social tranquility and the general welfare.

They have taken possession of power, and fortified themselves behind protective statutes. Regardless of the country's welfare, and hardened against the woes of want, and the wails of distress, they have banded together, to maintain the supremacy of gold and the monopoly of the most important distributive medium of the world's wealth. This is the enemy which is blocking the wheels of progress and scattering desolation through the land.

Labor and machinery are ample to produce, and transportation to distribute; but while limited to the meager barbaric medium of exchange—which was barely sufficient when products were few, and hand made; all labor thrown out of employment by the introduction of machinery must perish or seek subsistence by preying upon the peace and safety, and the surplus of society.

The medium of value exchanges must keep pace with the increase and facilities of transportation, as well as the improvements in production and labor-saving machinery, or the world will return to the pack-mule, the distaff and the tread-mill.

W. A. WELLS.  
Corvallis Feb. 21, 1879.

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FOR 1879!

VOL. SIXTEEN.

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W. A. WELLS, Proprietor.

Corvallis, Feb. 21, 1879.

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