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**General Survey**  
**Columbia River Gateway Country**



PORTLAND CHAMBER OF COMMERCE

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# PORTLAND CHAMBER OF COMMERCE

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### GENERAL SURVEY OF THE COLUMBIA RIVER GATEWAY COUNTRY

As the name implies, this survey is general in character.  
The Portland Chamber of Commerce will always furnish  
more specific information when requested. ☺ ☺ ☺

PREPARED BY THE  
DEPARTMENT OF INDUSTRIES  
WILLIAM H. CRAWFORD, MANAGER  
PORTLAND, OREGON

RMC

November 1st, 1920

MEMBER  
OF  
CHAMBER OF COMMERCE  
OF THE  
UNITED STATES OF AMERICA

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“The Pacific Ocean, its shores, its islands and the vast region beyond, will become the Chief Theatre of Human Activities and events in the World’s Great Hereafter.”

WILLIAM H. SEWARD,  
*Ex-Secretary of State.*

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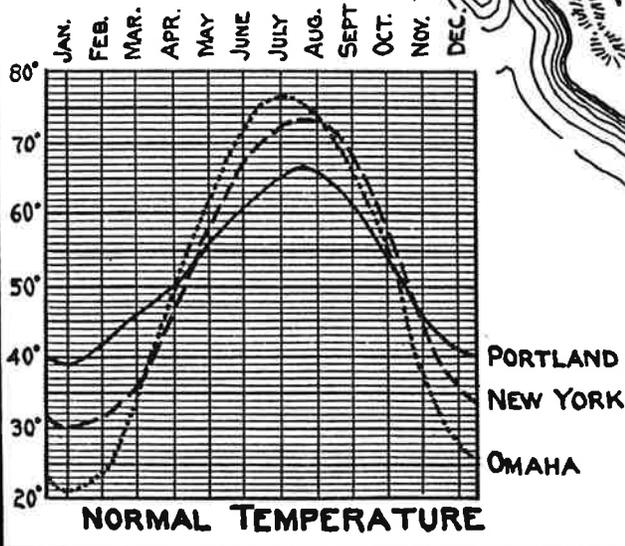
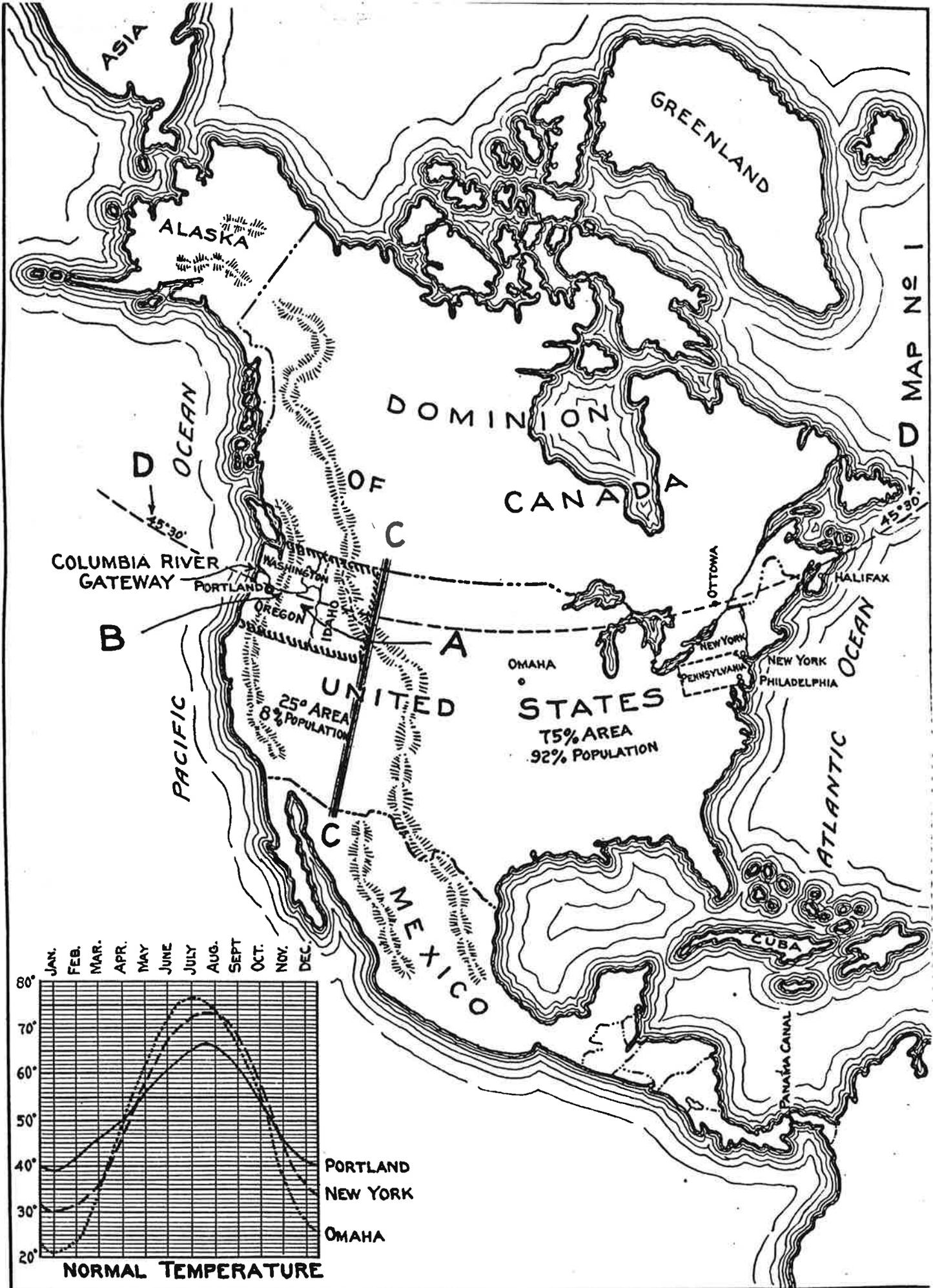
“The Mediterranean Era died with the discovery of America; the Atlantic Era has reached the height of its development; The Pacific Era, destined to be the greatest, is just at the dawn.”

THEODORE ROOSEVELT,  
*Ex-President.*

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COLUMBIA RIVER GATEWAY

B

DOMINION OF CANADA

25° AREA 8% POPULATION

75% AREA 92% POPULATION

MEXICO

ATLANTIC OCEAN

CUBA

PANAMA CANAL

PORTLAND  
NEW YORK  
OMAHA

## INTRODUCTION

Reference is first made to map on opposite page, which is intended to show:

A. The general geographical location of the great Pacific Northwest, with respect to the lands bordering on the Pacific Ocean from Alaska to the Panama Canal.

B. The Columbia River Gateway.

C. The natural division of the United States formed by the Rocky Mountains with distribution of population.

D. The relative location of Eastern and Western points in the United States, referred to lines of latitude with chart in the lower left hand corner showing the very even range of temperature at Portland, Oregon.

Compared with New York, and Omaha, Portland has much higher average winter temperature and much lower average summer temperature; high efficiency climatic conditions for plant and animal life.

There is a commercial value in good climatic conditions. Communities have for years advertised favorable climate as a vacation luxury. The Columbia River Gateway Country has proved it to be one of the greatest of industrial assets.

Present estimated population of Oregon, Washington, Idaho, Montana and Alaska 4,129,660 people, showing an average increase per decade for the past three decades of 103.7 per cent.

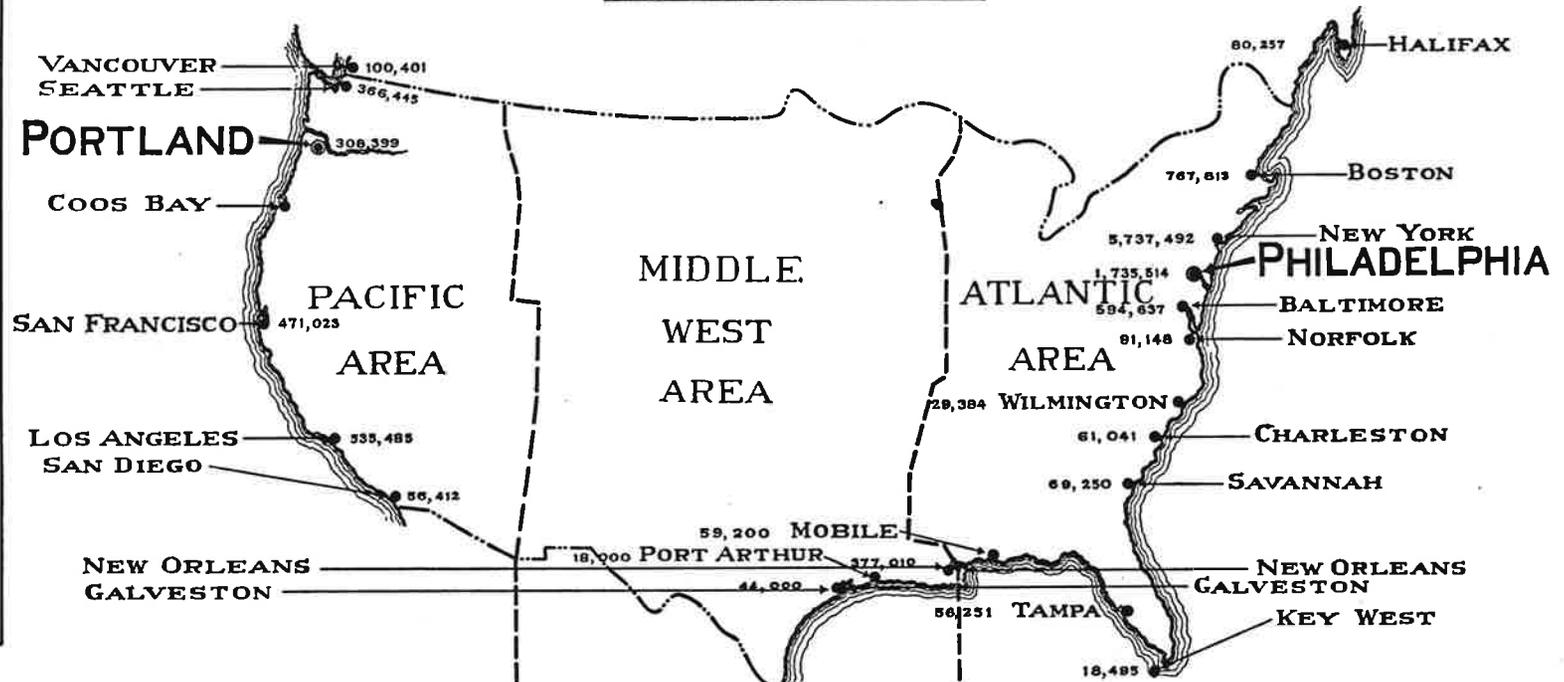
Present estimated population of California's trade territory 3,462,911, showing an average increase per decade for the past three decades of 47.2 per cent.

Attention is called to the central location of the Columbia River Gateway Country with respect to Alaskan business and Southern California business.

~ A STUDY OF ~

THE DISTRIBUTION OF THE POPULATION OF UNITED STATES.  
A COMPARISON OF COAST PORT DISTANCES & POPULATION.

Distance by Rail from PORTLAND	
MILES	
339	VANCOUVER
186	SEATTLE
●	PORTLAND
243	COOS BAY
722	SAN FRANCISCO
1197	LOS ANGELES
1324	SAN DIEGO
3204	NEW ORLEANS
2879	GALVESTON



Distance by Rail from PHILADELPHIA	
MILES	
1058	HALIFAX
326	BOSTON
91	● PHILADELPHIA
97	BALTIMORE
256	NORFOLK
638	CHARLESTON
754	SAVANNAH
1281	NEW ORLEANS
1693	GALVESTON
1363	KEY WEST

PERCENTAGE OF TOTAL UNITED STATES.

AREA	25%	50%	25%	AREA
POPULATION	8%	32%	60%	POPULATION

~ PORTLAND CHAMBER OF COMMERCE ~  
DEPT. OF INDUSTRIES, WILLIAM H. CRAWFORD, MGR.  
PORTLAND OREGON.

SOURCE OF STATISTICS.  
Population of U.S. Cities.  
Mileage between Cities.  
Population of Canadian Cities.  
Population, Percentage, Estimates.

Statistical Abstract of the United States for 1919. U.S. Dept. of Commerce pp. 49-51 incl.  
U.S. Post Office Dept. Figures quoted in World Almanac for 1919. pp. 318-320.  
Canada Year book published by Dominion Bureau of Statistics 1918. pp. 89-92.  
Statistical Abstract of the United States for 1919. pp. 33-37.

## POPULATION DISTRIBUTION OF THE UNITED STATES

The study on the opposite page is made to show the distribution of population over the Pacific Coast area, Atlantic Coast area and Middle Western area.

In order to give some conception of relative distances on the Pacific Coast, comparison is made with the ports of the Atlantic. Portland is used as the basis of Pacific Coast measurements and Philadelphia on the Atlantic Coast because of its similarity as a seaport.

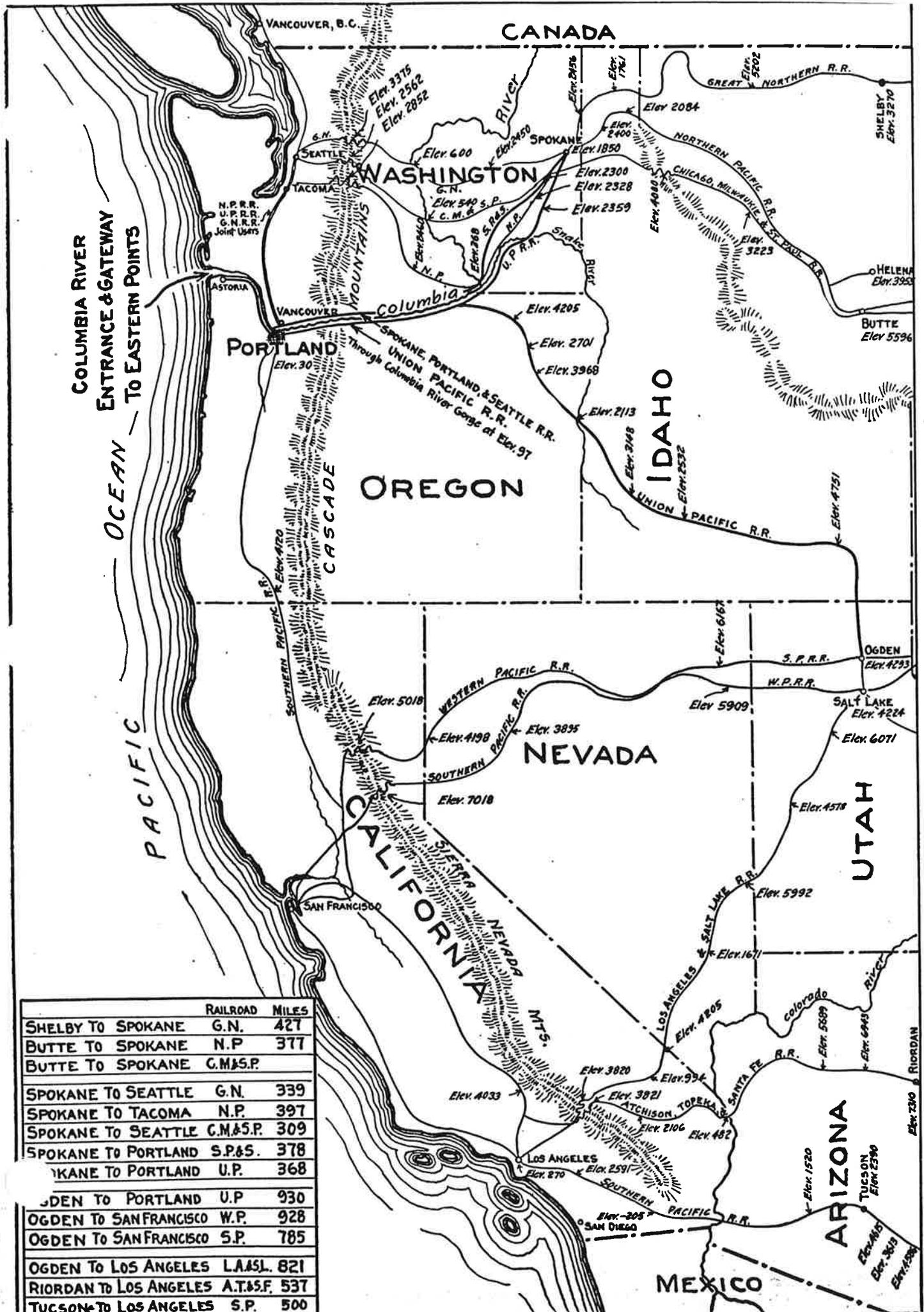
**The population of the United States has shown an average increase per decade for the past three decades of 22.4 per cent.**

**Population of the Pacific Slope during corresponding period shows an average increase of 80.1 per cent. In other words, the Pacific Coast is growing about four times as fast as the country as a whole.**

Relative importance of various ports based on value of exports, according to tabulations of U. S. Department of Commerce, for year ending June 30th, 1920:

New York	\$3,383,638,588
Galveston	598,239,227
New Orleans	589,409,222
Philadelphia	449,691,705
Baltimore	338,961,433
Savannah	311,171,389
Boston	281,614,919
San Francisco	233,654,773
Seattle	228,186,694
Norfolk	226,008,288
Tampa	96,154,982
Mobile	87,782,701
Port Arthur	74,765,920
Portland (Oregon)	42,812,891
Wilmington	34,812,142
Charleston	32,474,625
Los Angeles	21,874,135

It will be observed that the value of exports has no direct bearing on the size or importance of the city. The manufacture of various commodities from raw materials is what builds industrial communities. Portland, Oregon, is a great center where the staple raw materials are converted into articles of food, clothing, and shelter and shipped to the markets of the world.



COLUMBIA RIVER  
ENTRANCE & GATEWAY  
TO EASTERN POINTS

PACIFIC OCEAN

CASCADE MOUNTAINS

IDAHO

OREGON

NEVADA

CALIFORNIA

UTAH

ARIZONA

CONTINENTAL DIVIDE  
MOUNTAIN REGION  
ROCKY MOUNTAIN REGION

	RAILROAD	MILES
SHELBY TO SPOKANE	G.N.	427
BUTTE TO SPOKANE	N.P.	377
BUTTE TO SPOKANE	C.M.&S.P.	
SPOKANE TO SEATTLE	G.N.	339
SPOKANE TO TACOMA	N.P.	397
SPOKANE TO SEATTLE	C.M.&S.P.	309
SPOKANE TO PORTLAND	S.P.&S.	378
SPOKANE TO PORTLAND	U.P.	368
OGDEN TO PORTLAND	U.P.	930
OGDEN TO SAN FRANCISCO	W.P.	928
OGDEN TO SAN FRANCISCO	S.P.	785
OGDEN TO LOS ANGELES	LA&S.L.	821
RIORDAN TO LOS ANGELES	A.T.&S.F.	537
TUCSON TO LOS ANGELES	S.P.	500

MAP No. 2

### RAILROADS OF THE PACIFIC COAST

Reference is made to map on opposite page, which shows the Pacific Coast States West of the Rocky Mountains with all existing trans-continental rail lines.

The principal sags and summits on the rail lines are indicated, and the table in the lower left hand corner shows the mileage from various interior points to Pacific Coast Ports.

It will be noted that Portland, Oregon, has the only water grade route through the mountains of the Pacific Coast. This reduces the cost of railroad operation in many ways as compared with costly mountain routes and saves much valuable time.

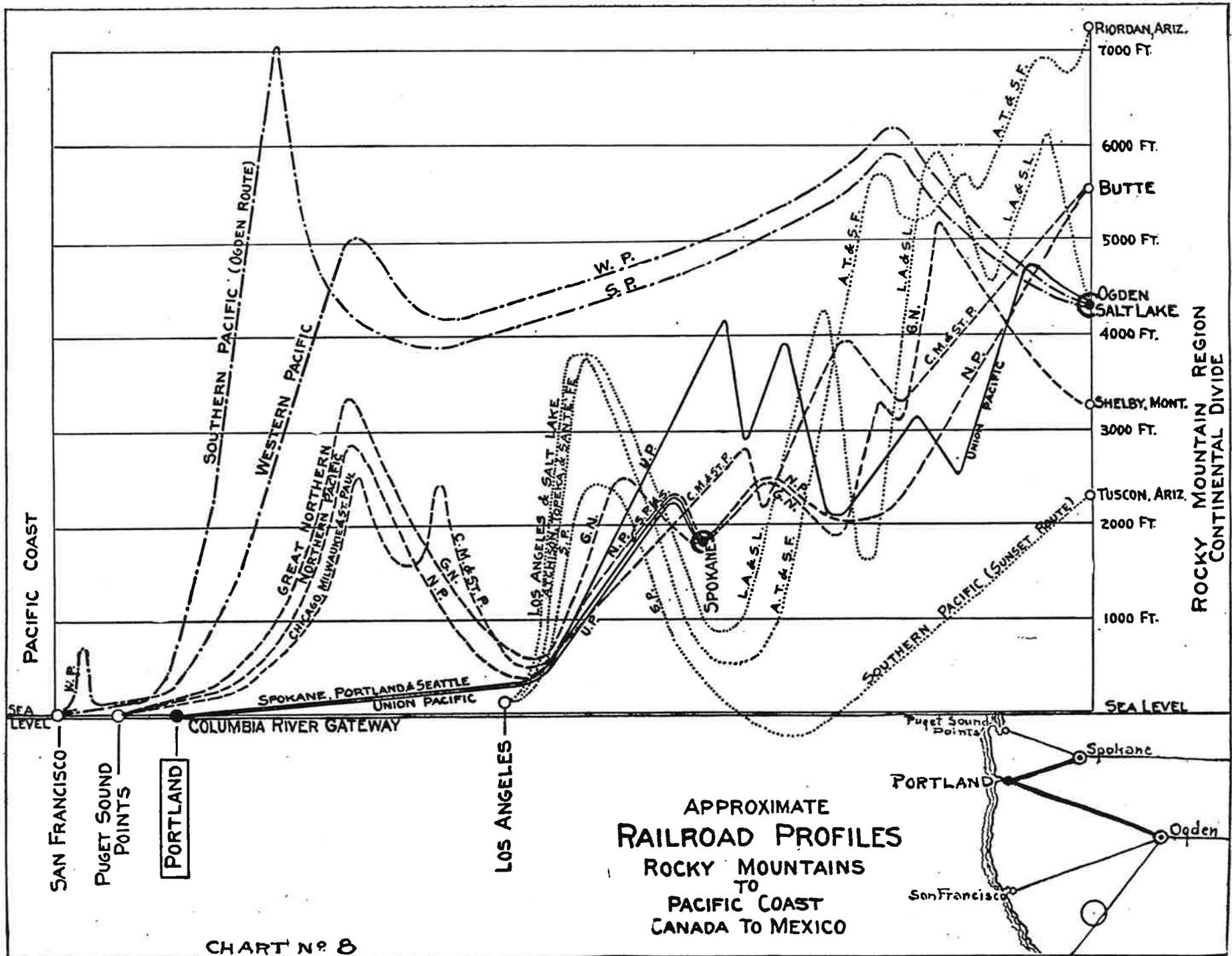
Eastern rail connections through the Columbia River Gateway in a generally northerly direction to Spokane, or southeast to Ogden and Salt Lake City give Portland distinct commercial advantages over other Pacific Coast Ports.

A very graphic presentation of these railroad profiles is shown by chart on Page 7, which should be referred to in connection with this map.

Portland, Oregon, is the seaport city of Spokane, Washington, and of Salt Lake City, Utah, and of the vast empire intervening.

All transcontinental rail lines reaching Spokane or Salt Lake City from the east connect with tide water at Portland, Oregon, through the gorge of the Columbia River.

This is the one port on the Pacific Coast where trans-continental rail lines from the Rocky Mountain plateau, connect with deep-sea shipping without having to climb over the snow-covered peaks of the Cascades or Sierra Mountain ranges.



APPROXIMATE  
RAILROAD PROFILES  
ROCKY MOUNTAINS  
TO  
PACIFIC COAST  
CANADA TO MEXICO

## PACIFIC COAST RAILROAD PROFILES

In order to give a proper presentation of the railroad situation, the chart on opposite page has been prepared, showing approximate railroad profiles from the Rocky Mts. to the Pacific Coast and from Canada to Mexico.

It will be observed that the railroads reaching Portland through the Columbia River Gateway eliminate the Cascade Mountain climb.

Using Spokane as a common point for comparison with Puget Sound; using Ogden and Salt Lake City as a common point for comparison with San Francisco, a careful study of the chart discloses that the railroads reaching Portland operate through a much lower level country where snow interference is not so bad as with the higher altitude lines and where a local freight traffic is more likely to build up in the years to come.

The profile chart is reasonably accurate and forms a very interesting study indicating Portland's rail supremacy.

In order to thoroughly understand this chart it should be considered in connection with map opposite Page 6.



## PACIFIC NORTHWEST POPULATION SURVEY

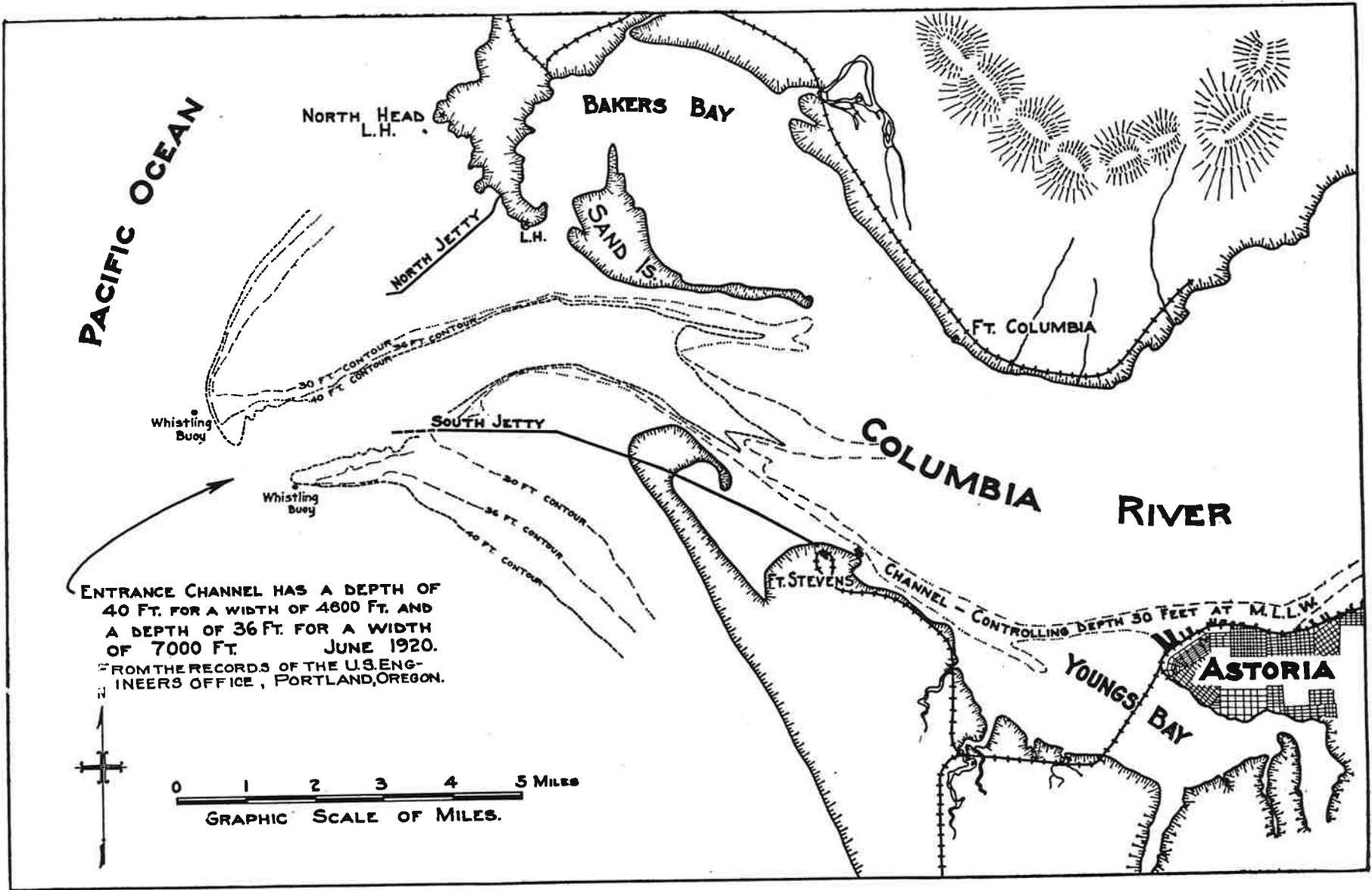
The three Northwestern states of Oregon, Washington and Idaho are shown opposite. The principal rail line connections are indicated as well as most of the important cities and towns.

No attempt is made to present a complete or accurately detailed map which is almost impossible on such a small scale, but enough is shown to indicate in general, the distribution of population and the built-up areas by locating the cities and railroads.

The Northwest had in 1910 about 2,581,100 people, compared with 2,663,778 for California.

The Northwest average decade rate of increase for thirty years was twice the rate of increase for California. The Northwestern States will probably maintain this higher percentage of increase for some time in the future, because they have many times as much agricultural lands with water available for irrigation, many times as much water power, and nearly all of the timber forests of the Coast. These facts should insure twice the population in the Northwest within a few years than to be found in California.

Population of Utah and Wyoming, which markets are reached equally well from Oregon or California, estimated 725,284 people, showing an average increase per decade for the past three decades of 69.8 per cent.



**ENTRANCE TO COLUMBIA RIVER**

## COLUMBIA RIVER GATEWAY HARBOR ENTRANCE

The entrance to the Columbia River is shown opposite.

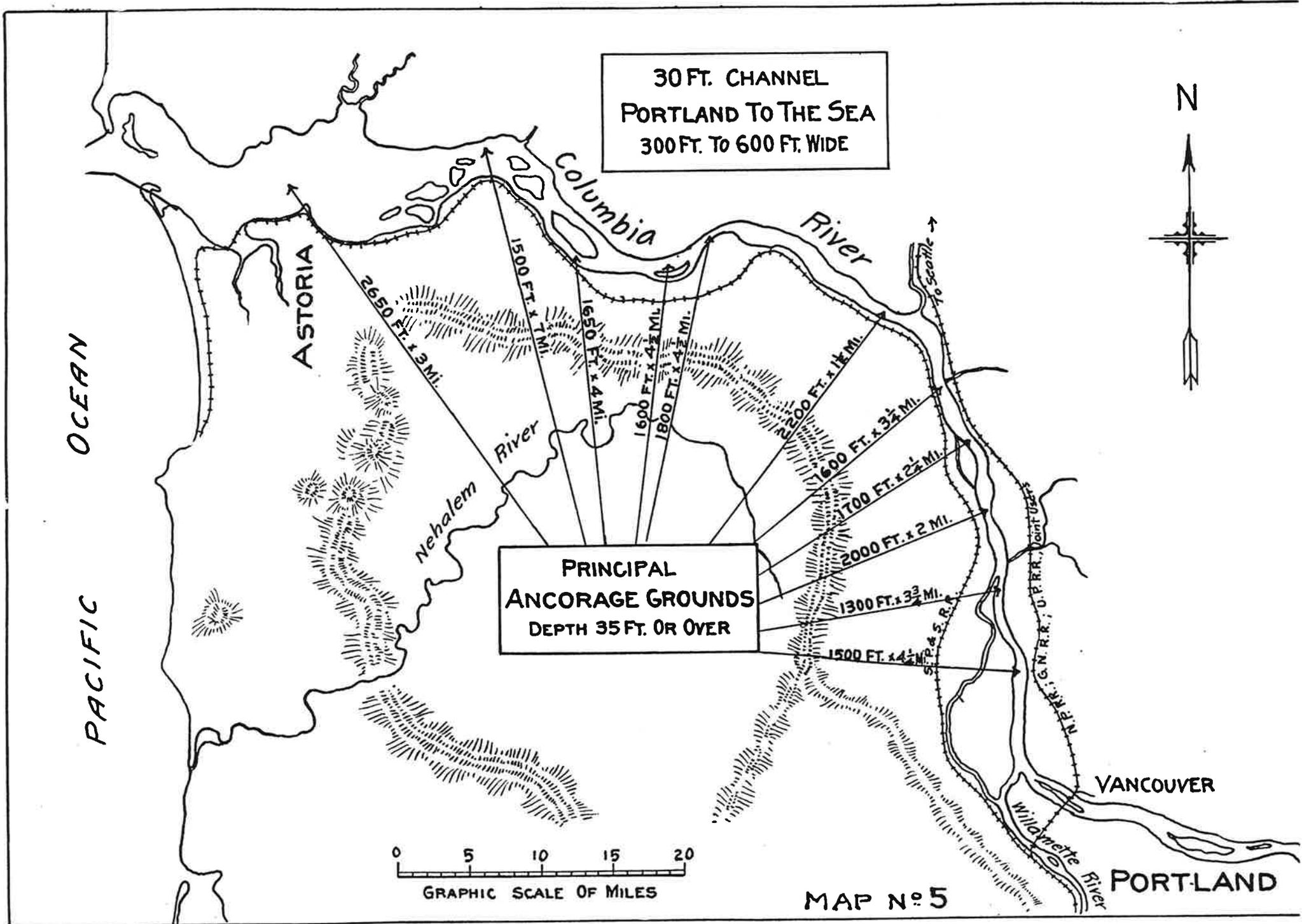
The United States government has recently completed permanent improvements at the mouth of the Columbia River, consisting of a north and south jetty, which entirely eliminates the old bar formation, giving a controlling depth of forty-two feet at mean low water with a clear channel four thousand six hundred feet wide for a depth of forty feet. The thirty-six foot contour line at the river mouth shows a channel width of seven thousand feet. The main channel depth at average tide is forty-seven and one-half feet.

The Port of Portland Commission has been doing work in the river in cooperation with the Federal Government. These harbor improvements have extended over a long period of years and were not really completed until just before the outbreak of the world war. The old conditions existing before these permanent improvements had been made were widely advertised and are still thought to exist by many who are uninformed. Competitive ports have also been more inclined to perpetuate the original records than to advertise the new advantages.

The real facts are that the Columbia River entrance is now in first class shape as well as the river channel to Portland. The upper harbor facilities are able to take care of the largest ocean carriers operating on the Pacific.

The Port of Astoria, just inside the mouth of the river, has been brought up to a high standard of excellence and there are numerous other points on the river prepared to load and discharge cargoes, principally lumber and fish cannery products, handled by ocean going ships.

The Columbia River in detail, to the fresh water upper harbor of Portland, is shown by the three maps that follow.



## COLUMBIA RIVER TO PORTLAND AND INLAND WATERWAY SYSTEM

The small scale map on opposite page cannot give a very clear conception of the size of the Columbia River, without reference to the figures shown.

A 30 foot channel at zero stage of the River extends from Portland to the sea, averaging in width from 300 to 600 feet.

There are larger areas of greater depth which have been referred to as anchorage grounds.

The principal ones are shown on this map, all of which are 35 feet deep or over with length shown in miles and width in feet.

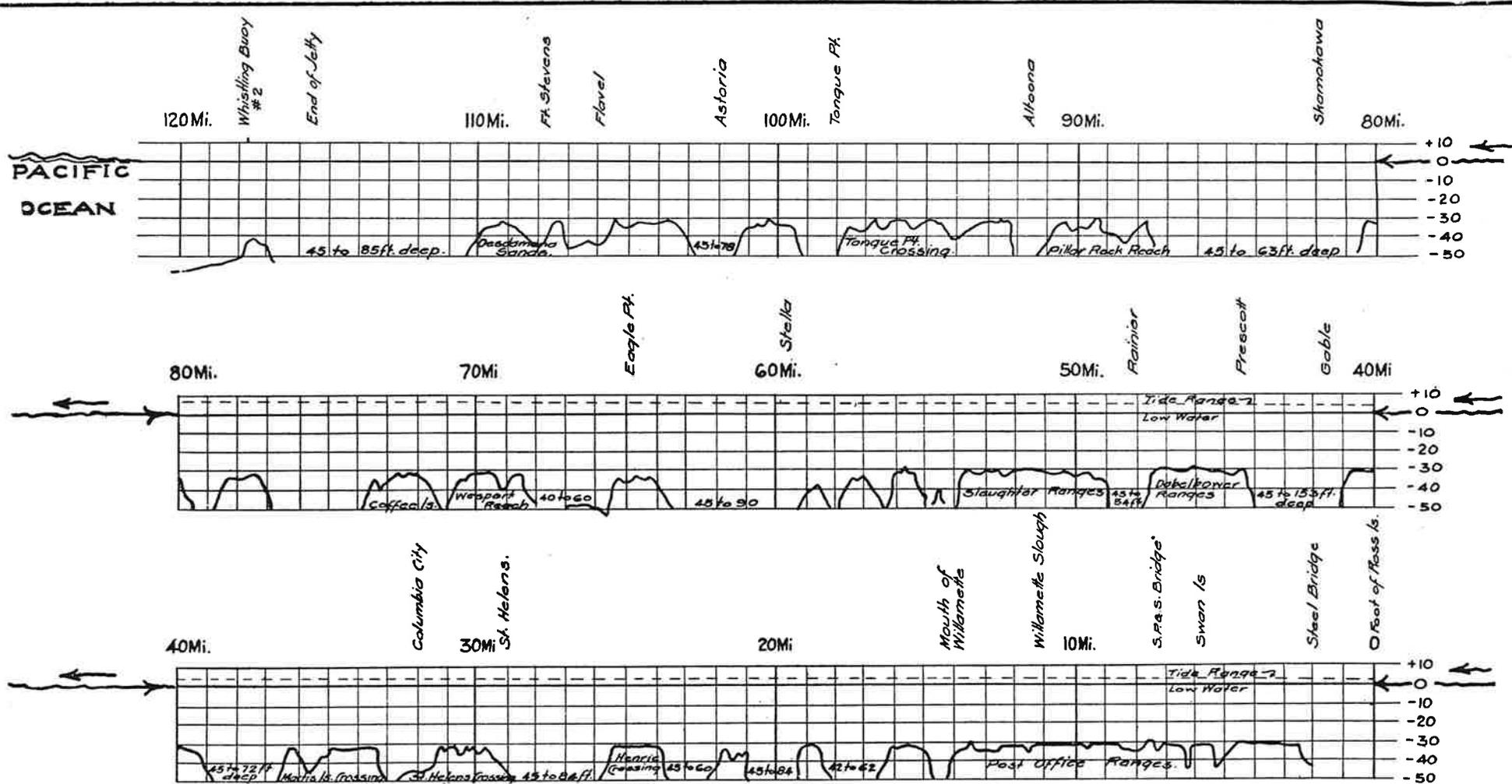
The total distance from the docks in Portland to the ocean is about one hundred miles.

Elsewhere in this survey a comparison is made between the Port of Portland and the Port of Philadelphia. They are similar in many respects.

According to the U. S. G. S. Water Supply Paper No. 234, United States Department of Interior, pages 52 and 57, the Columbia River is shown to have an annual discharge about twelve times greater than the Delaware River.

The inland waterway low stage river depths are as follows:

Astoria to Portland (Columbia River)	30 feet
Portland to Celilo (Columbia River)	9 feet
Celilo to mouth of Snake River (Columbia River)	4½ feet
Snake river to Priest Rapids (Columbia River)	4½ feet
Mouth of Snake River to Lewiston (Snake River)	3 feet
six to eight months	
Mouth of Snake River to Lewiston (Snake River)	20 inches
Portland to South end of Industrial Center (Willamette River)	10 feet
Industrial Center to Oregon City (Willamette River)	6 feet
Oregon City to Salem and Albany (Willamette River)	2½ feet



PROFILE  
 WILLAMETTE AND COLUMBIA RIVERS.  
 PORTLAND TO THE SEA.

PORTLAND CHAMBER OF COMMERCE  
 DEPARTMENT OF INDUSTRIES  
 Wm. H. Crawford Mgr.  
 PORTLAND, OREGON

Scales: { Hor. 1" = 5 Mi.  
 vert. 1/8" = 10' 9-23-1919

## COLUMBIA RIVER AND WILLAMETTE RIVER CHANNEL PROFILES

An interesting study can be made of the profile chart of the Columbia River from the Sea to Portland and for a short stretch of the Willamette River within the city limits of Portland.

This chart shows in very graphic form the relatively small amount of dredging that it is necessary to do to maintain a thirty foot channel. If traffic demands and river use ever justifies going to a depth of thirty-five feet or more, it is largely a question of skimming off the top of a few ridges in the river bottom as against a continuous digging operation that is necessary in some of the greatest ports in the world.

It is very easy to observe from this chart that the river mileage that does not have to be worked over at all is five times greater than the mileage requiring dredging to keep the full depth channel.

An enlarged view of the Columbia River at its junction with the Willamette River at Portland and Vancouver, follows:

# WASHINGTON

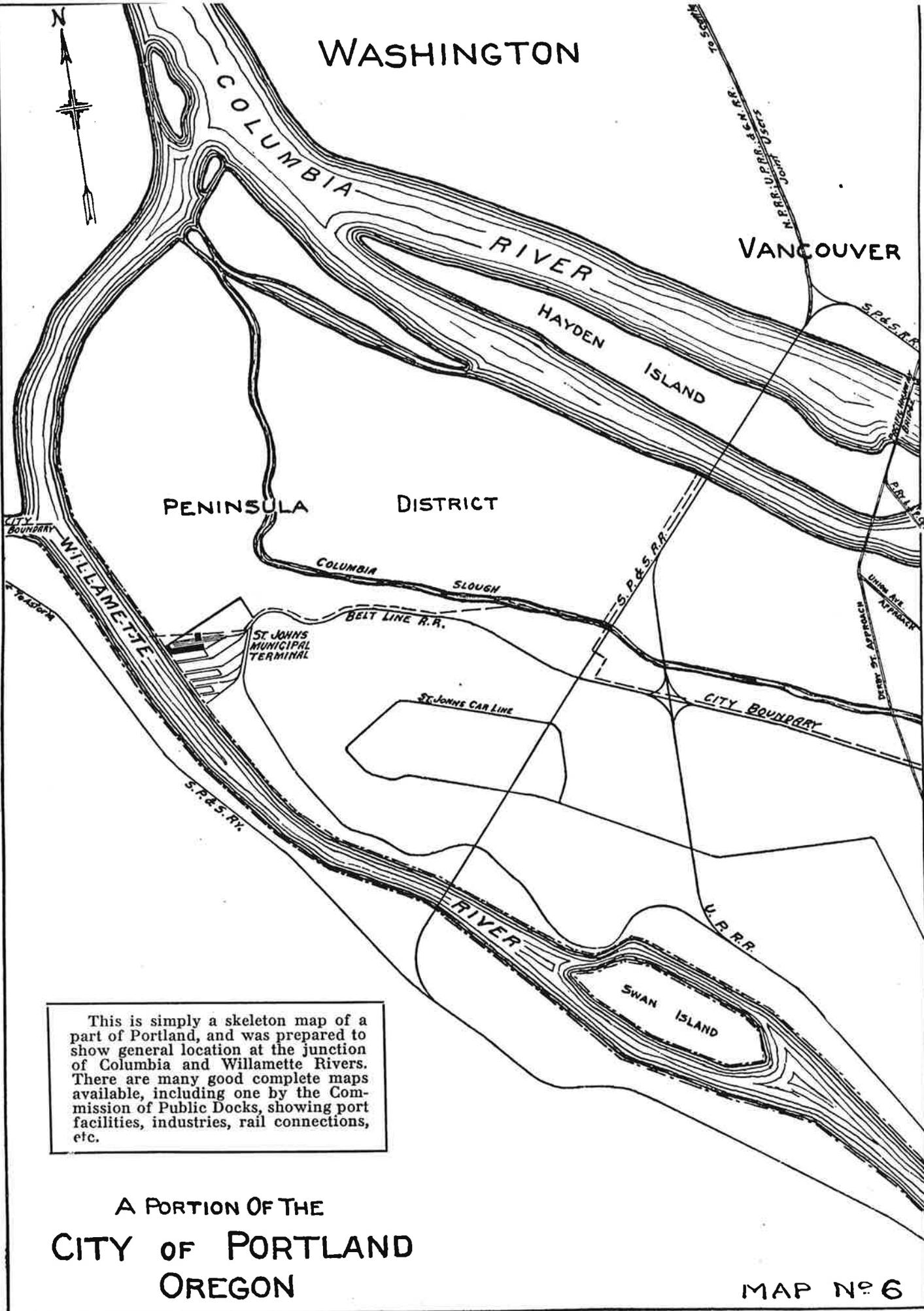
VANCOUVER

PENINSULA DISTRICT

This is simply a skeleton map of a part of Portland, and was prepared to show general location at the junction of Columbia and Willamette Rivers. There are many good complete maps available, including one by the Commission of Public Docks, showing port facilities, industries, rail connections, etc.

A PORTION OF THE  
CITY OF PORTLAND  
OREGON

MAP N° 6



## THE CITY OF PORTLAND

A portion of the City of Portland known as the Peninsula District and the West Side Industrial District is shown on opposite page. Also the junction of Columbia and the Willamette Rivers.

This part of Portland's harbor is below all the bridges except the Spokane, Portland and Seattle Railway Bridge, which has the largest draw span in the world.

Generally speaking this entire area is open for development purposes, although it is already well served by railways, street car lines and all other public utilities. The Peninsula District back from the shore line is built up as a great residential area, providing a large reservoir of contented, home owning, skilled and unskilled labor.

Numerous industries are already located at various points on the area shown, but not by any means to the extent of the possible development.

The population of Portland is upwards of 300,000.

Area 66.36 square miles, of which 5 square miles are water, embracing the harbor. It is located like Philadelphia at the junction of two rivers, one hundred miles from the ocean, the rivers at Portland, however, being larger. The analogy between these two cities is striking. Portland is without a doubt the Western city of homes. It is a natural industrial center backed up by a great agricultural empire.

Only a portion of the area covered by Portland is shown on this map. There are many other important business and residence districts, South and East of the area shown.

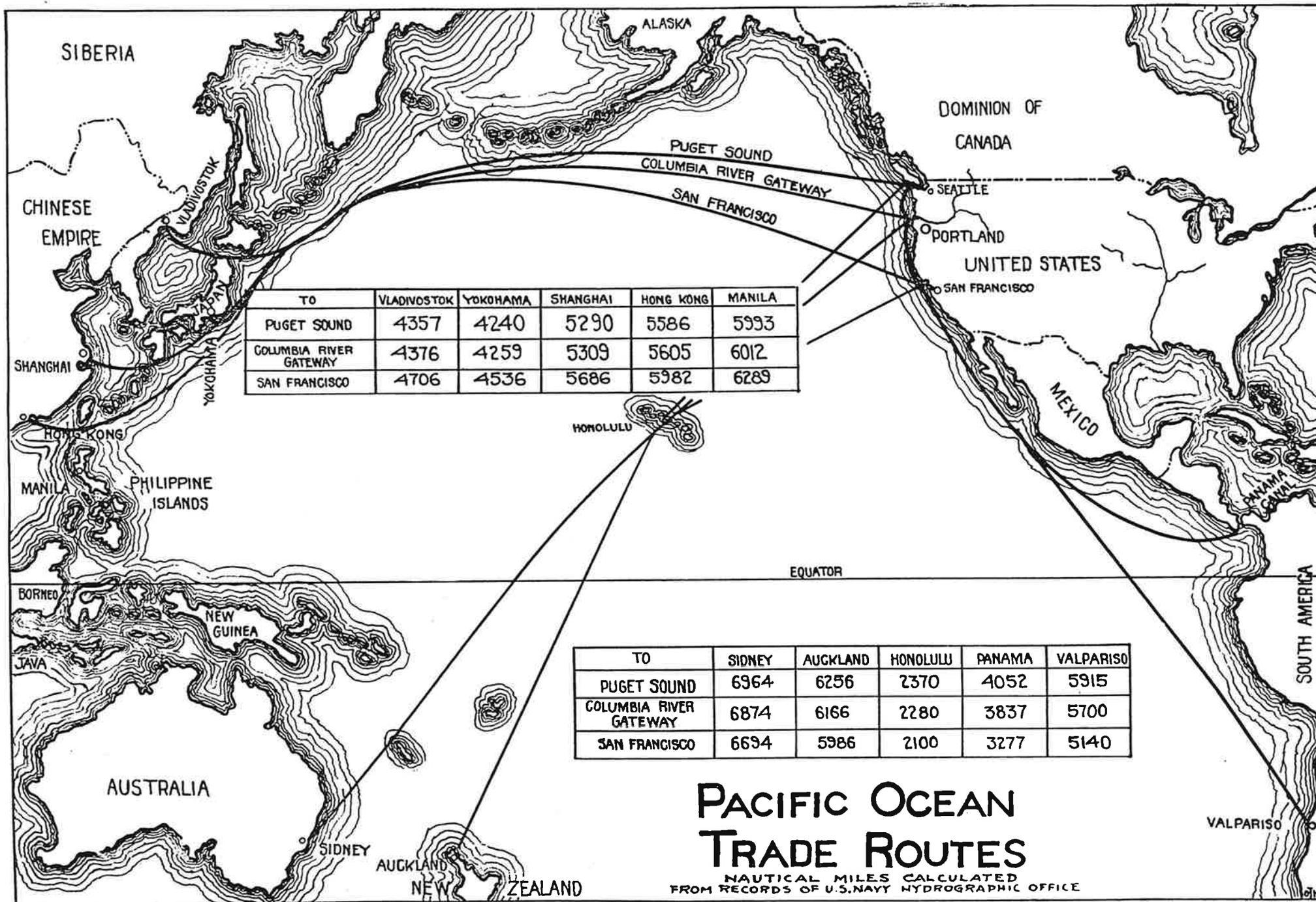
Regardless of the great area covered by the City, the local transportation facilities are excellent. Streets have been paved, water mains, gas mains and sewers laid, far in advance of all immediate needs. Electrical energy for light and power is available in great quantity. Development in advance of the population, in the past has worked a hardship on property owners and public utilities. Future expansion and growth will be made easier and quicker, however, as a result of these permanent improvements. Living expenses generally are less at Portland than any other seaport in the United States.

The financial standing of cities of the Coast, according to the Bureau of Census reports for 1918, shows a tax rate for municipal purposes on every thousand dollars worth of property at Portland .....\$ 7.51  
The cost of city government per capita is.....\$18.54

This is much lower than any other large city on the Pacific Coast.

The Bull Run water shed supplies Portland with the best water known anywhere in the United States. This flows by gravity through duplicate pipe lines to the City, is chemically pure and cold. There is an economical future development possible that will take care of a City nearly as large as New York.

In addition to the City and County Government, the harbor matters of Portland are handled by the Port of Portland Commission and the Commission of Public Docks.



TO	VLADIVOSTOK	YOKOHAMA	SHANGHAI	HONG KONG	MANILA
PUGET SOUND	4357	4240	5290	5586	5993
COLUMBIA RIVER GATEWAY	4376	4259	5309	5605	6012
SAN FRANCISCO	4706	4536	5686	5982	6289

TO	SIDNEY	AUGKLAND	HONOLULU	PANAMA	VALPARISO
PUGET SOUND	6964	6256	2370	4052	5915
COLUMBIA RIVER GATEWAY	6874	6166	2280	3837	5700
SAN FRANCISCO	6694	5986	2100	3277	5140

# PACIFIC OCEAN TRADE ROUTES

NAUTICAL MILES CALCULATED  
FROM RECORDS OF U.S. NAVY HYDROGRAPHIC OFFICE

## PACIFIC OCEAN TRAFFIC

The map of the Pacific Ocean shown opposite is intended to make clear some points regarding trade routes and relative distances.

The commerce of the Pacific Ocean is in its infancy. The Pacific Northwest is one of the last sections of the United States to be developed. The Columbia River Gateway Route, which will be the economical route of the future, has so far had but a minor part of a small total volume of trade. The port improvements and elimination of the bar at the mouth of the Columbia River being the last to be completed other ports could make an earlier bid for large shipping.

When commercial routes have once been established, it is difficult to change the cycle of business. Ships cannot afford to wait for cargoes and cargoes cannot afford to wait for ships. Therefore, the cargoes that would have found a natural outlet through the Columbia River Gateway, since completion of the permanent improvements of the channel to the sea, have to a great extent, been going north and south to the ports where the ships have been available. However, the Columbia River Gateway is now at that stage in its development where the cycle is changing.

An ever increasing tonnage, consisting of the natural products of this district, such as lumber, wheat, wool, etc., in raw state and wholly or partially manufactured is accumulating at Portland in the shape of cargoes that are very attractive to shipping. Ocean carriers are being placed on the berth at Portland and at other cities on the Columbia River in sufficient number to justify a great diversion of cargoes from the unnatural routes now taken to the natural route out of the Columbia River. In addition to this, the natural water grade rail routes through the Columbia River gorge to the East are developing more and more through traffic to and from the Orient, which must be transferred from rail to water at convenient points on the Columbia River.

Local business interests are now looking more to the sea and are not content with the former inland viewpoint and the country at large is learning the truth about the Columbia River Gateway route.

When this commercial route has at last been definitely established on a big scale, the cycle of business will then be based on natural advantages and cannot be changed by anything that it is possible to contemplate.

Population of countries bordering on the Pacific Ocean 909,508,000 people.

YEAR ENDING JUNE 30 1918

1611

AVERAGE PER YEAR FOR 10 YEARS

1306

AT  
SWIFT SURE LIGHT VESSEL NO.93  
PUGET SOUND

YEAR ENDING JUNE 30 1918

811

AVERAGE PER YEAR FOR 10 YEARS

696

AT  
COLUMBIA RIVER  
LIGHT VESSEL NO.88

YEAR ENDING JUNE 30 1918

1802

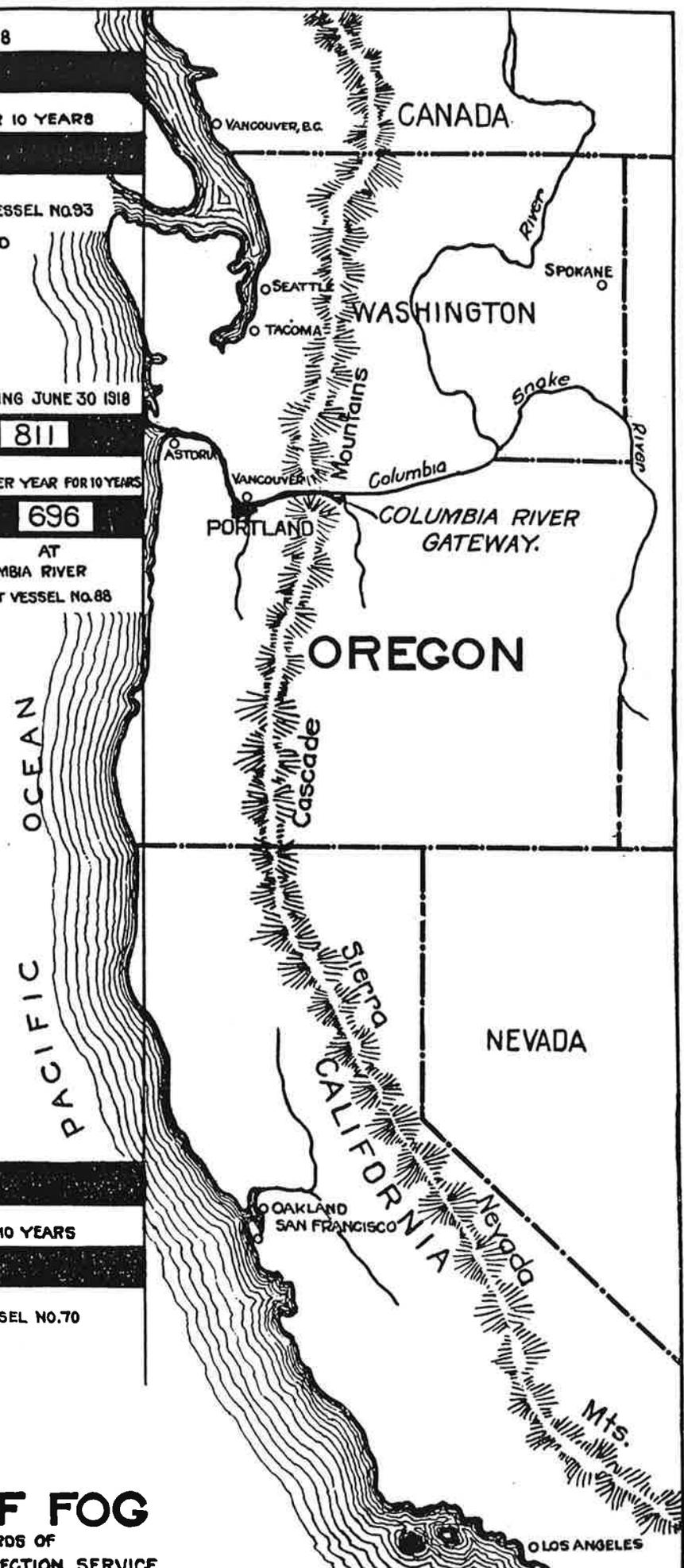
AVERAGE PER YEAR FOR 10 YEARS

1591

AT  
SAN FRANCISCO LIGHT VESSEL NO.70

# HOURS OF FOG

FROM THE RECORDS OF  
U.S. LIGHTHOUSE INSPECTION SERVICE



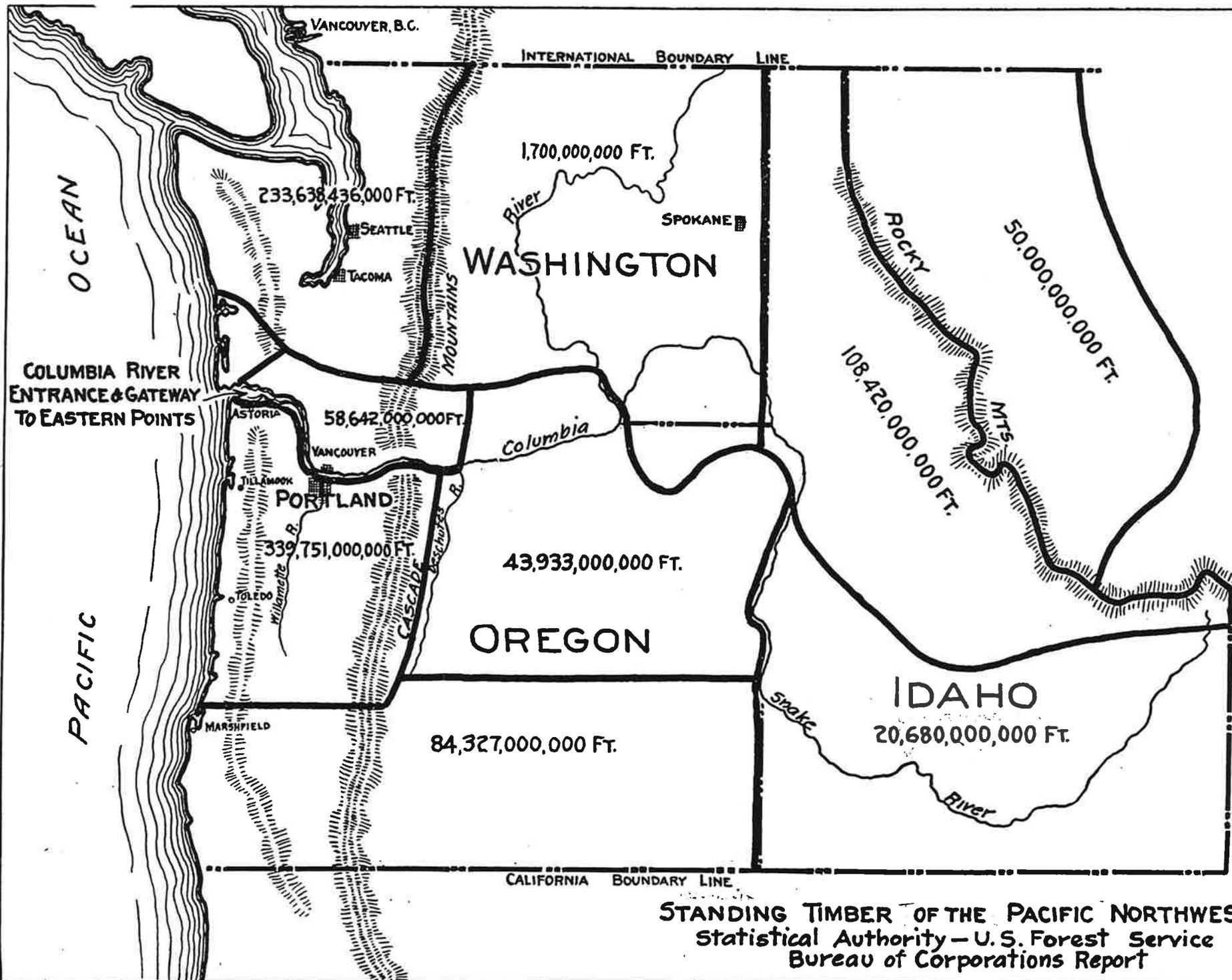
### COLUMBIA RIVER HAS LESS FOG

Fog as an interference to navigation is a most important consideration.

The record kept by the United States Lighthouse service at each of the United States Light Vessels off the harbor entrance at Puget Sound, Columbia River and San Francisco has been carefully studied. These records are uniform and the position at which they are taken makes the basis of a very fair comparison.

This chart indicates graphically the actual number of hours of fog per year at each point. First, for the year ending June 30, 1918, and Second, the yearly average for ten previous years.

The Columbia River Gateway is shown to have more than 50% advantage over the ports north and south in the matter of fogs that interfere with navigation. Fog causes delays that increase operating expenses and results in a high percentage of the marine disasters on the Coast.



**STANDING TIMBER OF THE PACIFIC NORTHWEST**  
 Statistical Authority - U.S. Forest Service  
 Bureau of Corporations Report

## TIMBER

The Pacific Northwest leads in the supply of raw materials on which industry is based.

Timber is one of the greatest assets and according to Federal statistics, Oregon, Washington and Idaho have a stand of commercial timber amounting to 1,000,000,000,000 feet B. M.

Oregon alone has 470,000,000,000 feet board measure. This is the greatest stand of soft wood known today.

The United States Forest Service has prepared statistics regarding the stand in various districts which have been arbitrarily selected for convenience in arranging these figures. These districts are shown on the map opposite and check up approximately with the trade districts shown on map opposite Page 17.

In addition to the natural growth of business to be expected here, there is every indication that in the very near future a large amount of the business now conducted in the yellow pine belt of the South will be transferred to the Pacific Northwest.

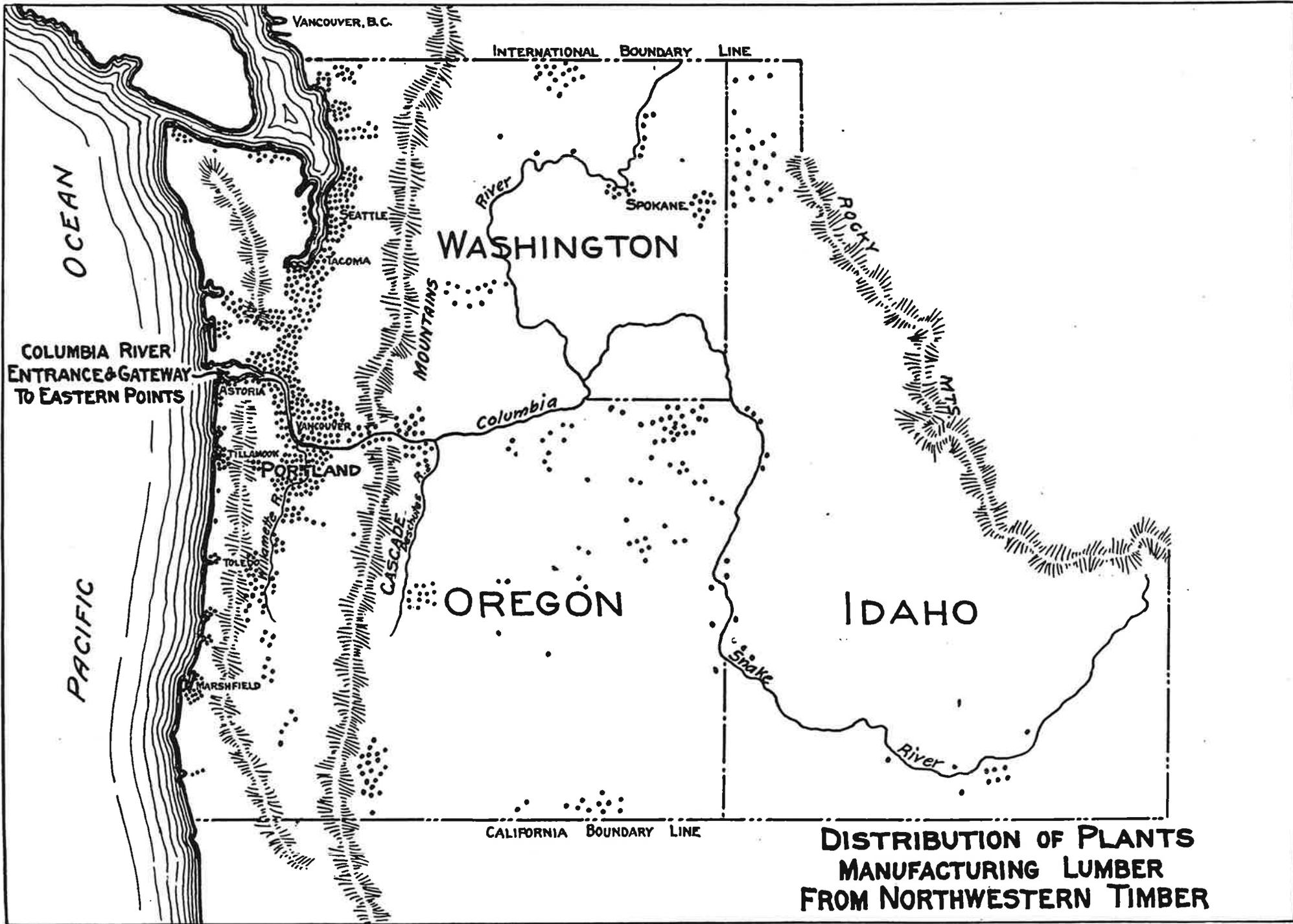
All the South has but 380,000,000,000 ft. of Yellow Pine left, and it is being cut at the rate of about 15,000,000,000 ft. a year. The Northwest is now cutting at the rate of about 7,000,000,000 ft. a year. Rapid increase is being made in the Northwest. It will cut 14,000,000,000 ft. a year within five to seven years. When this time arrives, Oregon's share will be 7,000,000,000 to 8,000,000,000 annually. When Portland's trade territory is producing lumber at this rate, the following approximate industrial conditions will prevail:

130,000 to 150,000 people will be employed in all woodworking industries of Portland territory. 10 to 12 solid train loads of lumber will go daily out of the Portland District for territory east of a line drawn through Idaho and Utah. 400 and more ships each with a capacity of 3,000,000 ft. of lumber will have to be kept in constant service to haul the portion of lumber that must be sold in off-shore or intercoast trade.

Such portion of lumber as is drawn from competitive territory, as stated above, will increase these totals.

This great lumber industry will quicken agriculture and stimulate all other industry, especially furniture, paper pulp, woodworking, machine and kindred manufactures.

Cutting timber in the Portland trade district at the rate of 8,000,000,000 ft. a year, the present supply will last for 65 years. New growth gets a heavy start in that time.



**DISTRIBUTION OF PLANTS  
MANUFACTURING LUMBER  
FROM NORTHWESTERN TIMBER**

## LUMBER AND GENERAL MANUFACTURING

The manufacture of northwestern timber into commercial lumber has already made a good start, although considering the magnitude of the raw material supply, it is but a beginning of operations that will probably expand many hundred percent and be carried through a period of several generations.

The map on opposite page has been prepared to show the approximate location and distribution of lumber manufacturing plants of consequence. Each dot representing one establishment.

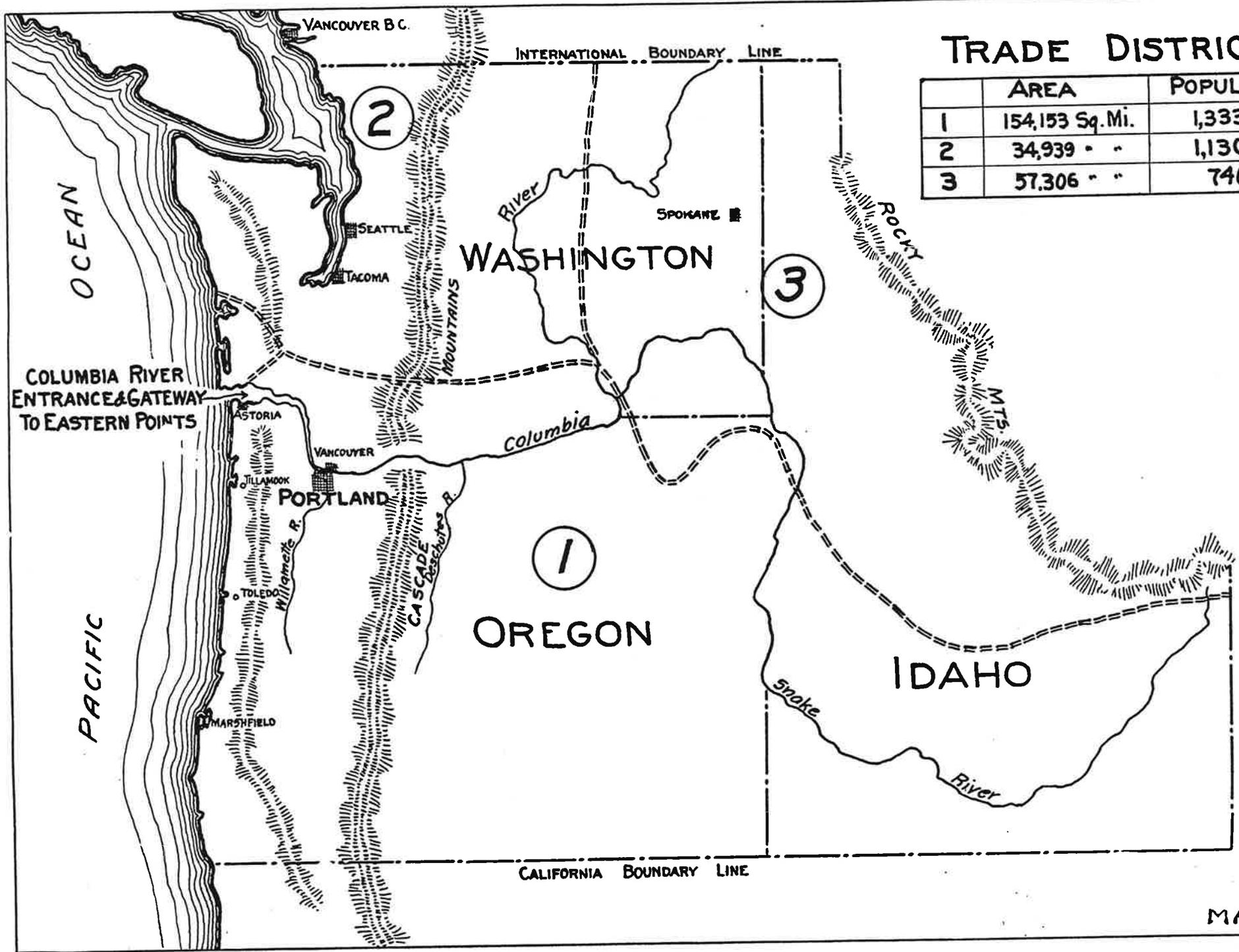
In addition to lumber mills, there are many plants manufacturing lumber products, such as furniture, wooden ware, barrels, etc.

Portland is the largest furniture manufacturing center in the West. Car building has also become an important factor in the local industrial field. Flour mills and woolen mills are operating here on a big scale.

Oregon is the center of the largest pulp paper production of the West. Pioneer mills were established at Oregon City; around these have developed others on the Columbia and Willamette Rivers. Paper mills are located at Oregon City, Astoria, Salem and Lebanon, Oregon, and at Camas, Washington.

See pages 22 and 23 for special consideration of steel and wood shipbuilding.

**Portland is a great industrial center, where the basic raw material supplies for food, shelter and clothing are converted into staple commodities and shipped by water and rail to the markets of the world.**



## TRADE DISTRICTS

	AREA	POPULATION
1	154,153 Sq. Mi.	1,333,000
2	34,939 " "	1,130,000
3	57,306 " "	740,000

## COMMERCIAL AND FINANCIAL

An enlarged view of the three Northwest States of Oregon, Washington and Idaho is the next exhibit.

The artificial State boundaries are shown; but in addition to this a heavy dotted line indicates the natural trade boundaries based on rail and water transportation, freight rates, etc. These districts are numbered 1, 2 and 3, with the area in square miles of each district and the population of each trade district shown.

Portland is the natural business center of District No. 1; Puget Sound Cities the center for No. 2 and a competitive field for both Portland and the Puget Sound Cities is shown in District No. 3.

A recent survey of office building accommodations and warehouse facilities shows Portland to have about twice as much as the average eastern city of the same population. This is one of the surface indications that Portland's jobbing business covers a very large area.

Cargoes are broken up at Portland and distributed as well as transferred from rail to water. Raw materials are also manufactured into staple commodities and distributed from this point to a greater extent than from any other city in the Northwest.

The value of various agricultural products for 1920 produced from this area is estimated to be:

Wheat	84,000,000 bu.	\$210,000,000
Oats, barley, rye and corn	55,520,000 bu.	57,024,000
Potatoes	18,956,000 bu.	47,380,000
Hay	6,263,600 tons	122,430,000
Apples	28,100,000 boxes	46,825,000
Fruit crop other than apples	Estimated	25,000,000
Horses	855,000 head	72,636,000
Beef cattle	1,543,000 "	69,444,000
Dairy cattle	588,000 "	50,216,000
Sheep	6,963,000 "	69,978,000
Hogs	793,000 "	16,256,000
Mineral Production	Estimated	28,500,000
Lumber Production	Estimated	225,000,000

(See page 20)

MAP OF THE  
**COLUMBIA RIVER BASIN  
AND VICINITY**

ISSUED BY  
**THE PORT OF PORTLAND**  
PORTLAND, OREGON

NOTE ALL WATER GRADES  
LEAD TO PORTLAND



## COLUMBIA DRAINAGE BASIN

The map opposite is intended to show the extent of the Columbia River drainage basin, approximately 254,000 square miles

The Columbia River, draining less than one-quarter of the area drained by the Mississippi, discharges nearly as much water annually and in a more even flow.

The Columbia and its tributaries having large volume and comparatively short distances, flow from the highest mountains of the continent through rugged formations and deep canyons; offering excellent opportunities for economical power development in large units.

A striking example is a tributary of the Columbia known as the Deschutes River, which is within one hundred miles of Portland. This river drops 4000 feet in 180 miles and discharges five million acre feet of water annually into the Columbia. The mean flow for the year is 7,720 second feet with minimum 5,080 second feet and maximum 30,000 second feet. No other stream on the Pacific Coast has such uniform flow nor such remarkable undeveloped power opportunities.

The same physical conditions that carry the Columbia River through the gorge near Portland influence the location of rail routes, highways, telegraph lines, power lines, etc.

The total acre feet annual discharge of streams in Oregon, Washington and California is as follows:

OREGON	
Columbia River at The Dalles.....	154,000,000
Willamette and lower Columbia tributaries.....	30,000,000
Oregon Coast streams.....	15,000,000
	Total acre feet....199,000,000
WASHINGTON	
Puget Sound Basin.....	17,000,000
Washington Coast Streams.....	10,000,000
	Total acre feet.... 27,000,000
CALIFORNIA	
Colorado River.....	7,174,000
South California Coast Streams.....	594,000
North California Coast Streams.....	6,958,000
San Joaquin Basin.....	6,036,000
Sacramento Basin.....	11,688,000
	Total acre feet.... 32,450,000



## WATER POWER SITES

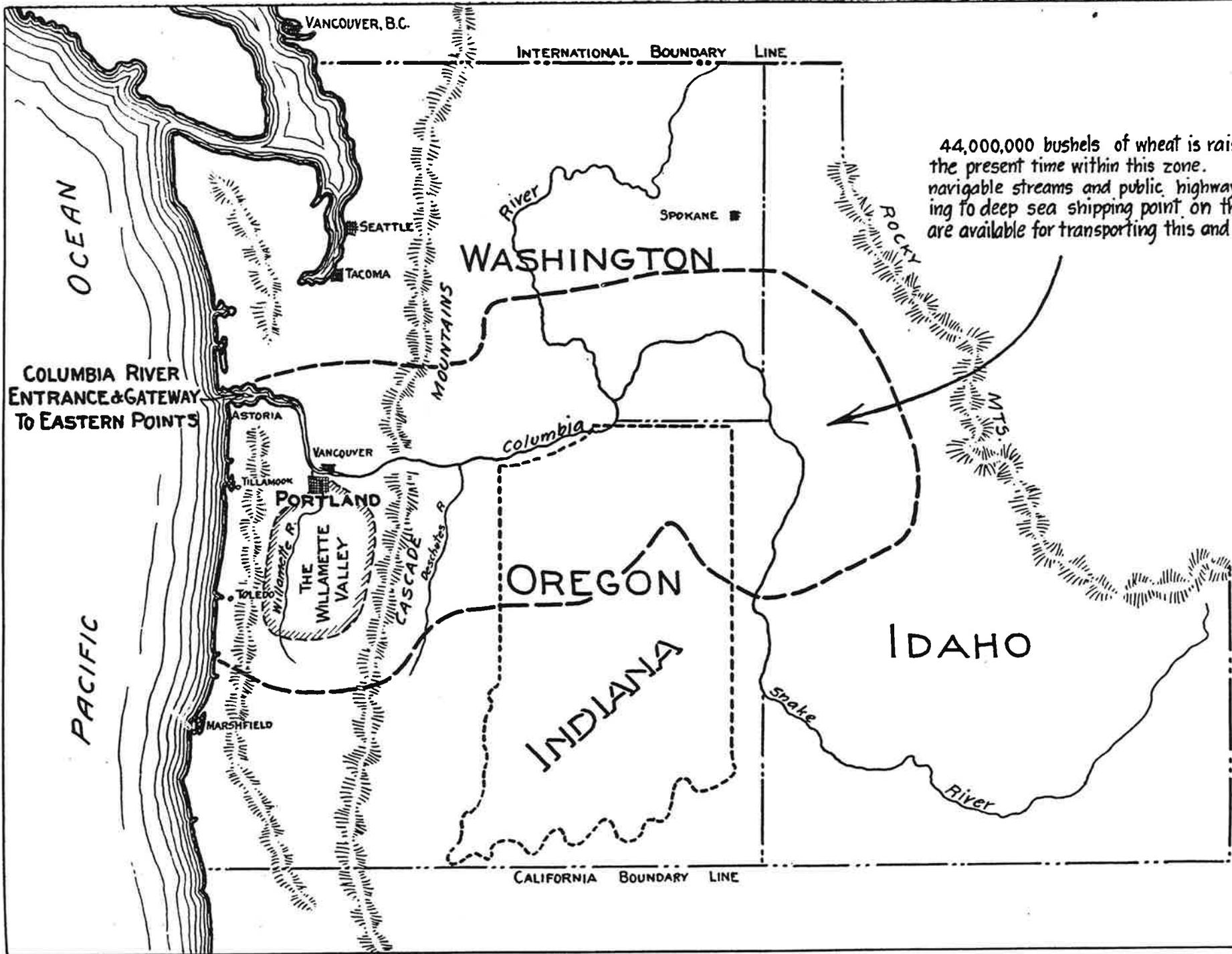
Approximately one-third of the possible water power development in the United States is found in the Columbia River Basin. In round numbers 20,000,000 horse power. Various water power possibilities, not yet developed, are indicated on the map opposite with the approximate distance from Portland.

PROJECT	RIVER	MINIMUM PRIMARY CAPACITY CONTINUOUS ELECTRICAL H. P.
A. Cascade	Columbia	200,000
B. The Dalles	Columbia	480,000
C. Umatilla Rapids	Columbia	120,000
D. Complete River	Deschutes	504,000
E. Complete River	Metolius	98,000
F. Palouse Rapids	Snake	50,000
G. Asotin	Snake	54,000
H. Coon Hollow	Snake	200,000
I. Cherry Creek	Snake	200,000
J. Mountain Sheep	Snake	120,000
K. Salmon River Tunnel		80,000
L. Devil's stair	Rogue	12,000
M. Horse Shoe Bend	Rogue	13,000
N.	Klamath	70,000
O.	Mackenzie	
P.	Umpqua	
Q. Upper	Lewis	18,000
R. Priest Rapids	Columbia	300,000

The rated capacity of the hydro-electric plants installed and operated, in the State of Oregon at the present time is somewhat less than 200,000 horse power, approximately one-half of which is located within a few miles of Portland. Portland and vicinity is served by competitive Electric Power Companies using hydro-electric and steam generating plants.

In analyzing costs the manufacturer often places more emphasis on the price of electric power than warranted by the facts. With the exception of the electro-chemical processes, very few industries show a finished manufactured product where the power costs exceed 5% of the total manufacturing cost. The average is around 2%.

The question of vital importance to any manufacturer is the assurance of continuous and uninterrupted power service at all times. The Columbia River Gateway Country is already well supplied with continuous electric current at lowest possible cost.



44,000,000 bushels of wheat is raised at the present time within this zone. The navigable streams and public highways leading to deep sea shipping point on the Columbia are available for transporting this and other crops.

## AGRICULTURAL STRENGTH

Agriculture is the Nation's basic industry.

Oregon is preeminently an agricultural State.

The map on opposite page shows that the area of Oregon is over twice that of Indiana and it may be said that the entire agricultural business of the State of Indiana could be located in the Willamette Valley just South of Portland.

Of the total of 61,188,480 acres of land in the State of Oregon, about 7,600,000 acres are now held as farms.

The map on opposite page bears a reference to wheat production within a certain area that is tributary to the Columbia River.

There is being developed a system of highways leading from the interior within the district shown, to the Columbia River, to transport the wheat by automobile to the Rivers and by river transportation to Portland and vicinity where extensive milling operations are conducted. The flour is then available for ocean shipment abroad and the by-product of milling operation is used as cattle feed in the dairy business West of the Cascade Mountains.

There is an average of 247 growing days per year, in the vicinity of Portland.

The livestock and dairy industries are conducted on a big scale in Oregon. Extensive sheep raising in the Northwestern group of States has lead to a concentration of Wool clip at Portland for storage and manufacturing.

Eight woolen mills are already established in this vicinity with the prospects of this being a future textile center.

Oregon has great quantites of arid land and plenty of water for irrigation. Also immense areas of cut-over timber lands good for agriculture and for pasturage. These lands are located where irrigation is not needed.

Furthermore, there are several hundred thousand acres of rich over-flow and marsh land subject to reclamation by drainage.

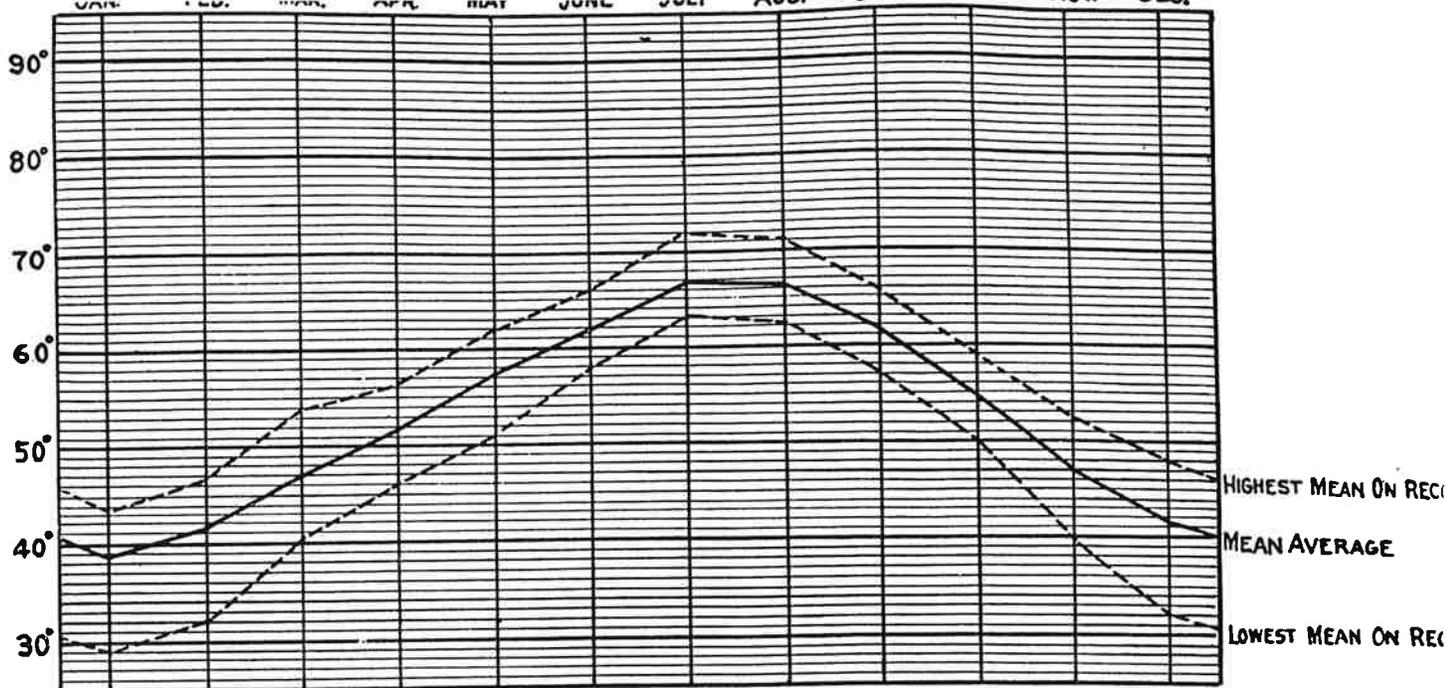
Agricultural development is now being carried out with great success on every class of tillable soil in Oregon.

Area lands in crops in 1919, about .....3,000,000 acres  
 Area subject to reclamation by drainage, approx.. 500,000 acres  
 Area subject to reclamation by irrigat'n, approx.2,000,000 acres  
 Area subject to reclamation by land clearing,

approximately ..... 830,000 acres

This increases from year to year as timber is removed from vast areas of the best agricultural land.

(See page 17 for value of agricultural products in 1920.)



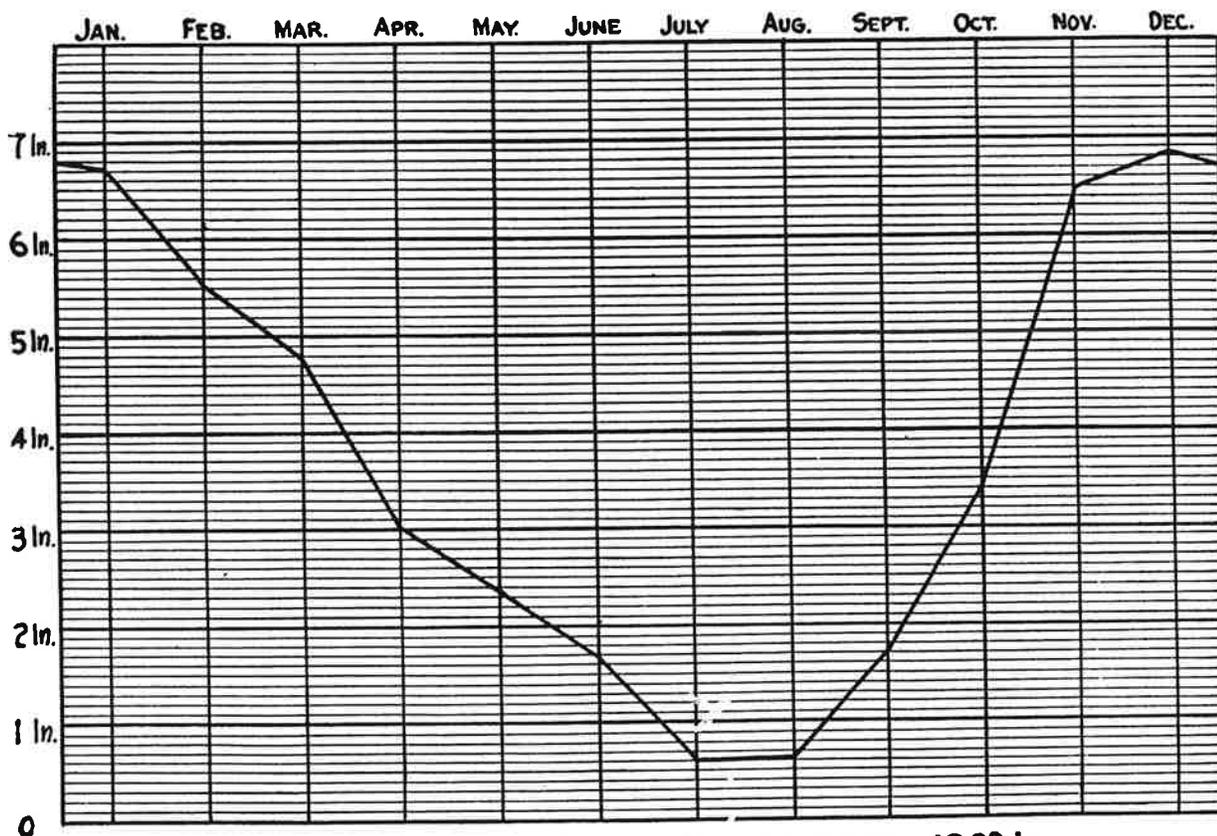
ANNUAL MEAN TEMPERATURE 53°

MONTHLY AND ANNUAL MEAN TEMPERATURES AT PORTLAND, OREGON.

1872 TO 1916 INCLUSIVE

LATITUDE 45°31'39" LONGITUDE 122°40'44" WEST.

AVERAGE 247 GROWING DAYS PER YEAR



AVERAGE ANNUAL PRECIPITATION 43.88 in.

MEAN MONTHLY PRECIPITATION AT PORTLAND, OREGON.

1872 TO 1916 INCLUSIVE

## EFFICIENT CLIMATIC CONDITIONS

A striking feature of the climatic conditions at Portland and vicinity is the absence of sustained extremes of either heat or cold.

The natural tendency seems to be for temperature and moisture to follow a good seasonal average.

Reference is made to chart on opposite page showing the monthly and annual mean temperatures at Portland, Oregon, over a forty-four-year period.

A chart is also shown on opposite page giving the mean monthly precipitation at Portland, Oregon.

The average annual rain fall generally increases as you go West from Portland and decreases East and South of Portland.

The practical expression of advantageous climatic conditions is to be found in labor performed in a given time without distress and in crops that can be grown during a certain season.

It has been absolutely determined by practical experience with various industries in the vicinity of Portland that human labor is highly efficient throughout the year, both winter and summer.

Anything that tends to reduce labor turn-over is of advantage to employer and employee.

Conditions prevalent on the Atlantic Seaboard where industrial plants often find it necessary to shut down for days at a time on account of the heat are never experienced in the Columbia River Gateway Country.

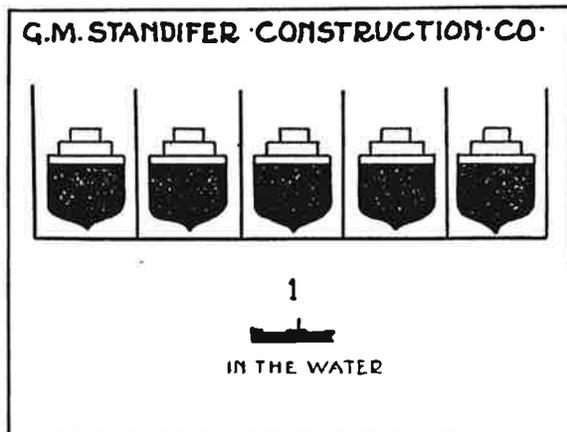
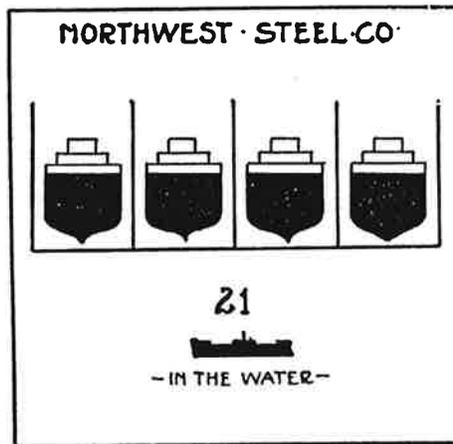
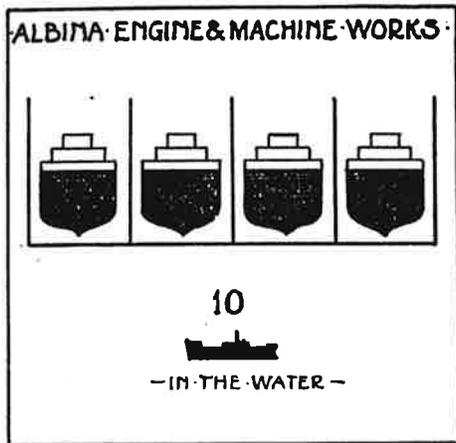
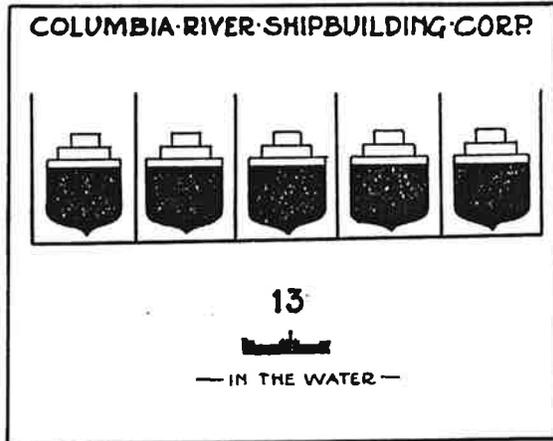
This District is also spared the snow blockade handicap of an Eastern winter. Heating problems for labor are reduced to a minimum for both inside and outside work.

Relative humidity is the relation between the quantity of invisible water vapor actually present in the air and the maximum quantity possible at the existing temperature.

At Portland the average relative humidity ranges from 85% in December to 64% in July.

In summer, when high humidity adds to the discomfort from heat, the daytime humidity at Portland is comparatively low. The problem of maintaining the proper degree of moisture in artificially heated buildings is simplified in Portland by the high out-door humidity prevalent in winter.

STEEL · SHIPBUILDING · RECORD  
· COLUMBIA · RIVER · DISTRICT ·  
· DECEMBER 31, 1918 ·



## STEEL SHIPBUILDING

Steel shipbuilding prior to the world war was not regarded as a Pacific Coast industry of much consequence.

The Pacific Coast has since taken front rank, however, in the matter of steel ship production.

The Northwest in particular on account of high labor efficiency, favorable climatic conditions and adequate transportation facilities, led during the emergency shipbuilding programme in the speed of production and low cost of both steel and wood ships.

The steel ship yards on the Columbia River at Portland and Vancouver are shown on the chart opposite. This is the record of business as it stood December 31, 1918.

Beginning with launchings in 1917; there had been placed in the water on December 31, 1918 - 45 steel ship hulls with a total tonnage of 345,700 deadweight tons and the hulls on the ways totalled 18.

Up to October 1st, 1920, 36 additional steel hulls had been launched from these yards and a total of 99 large steel ships finished.

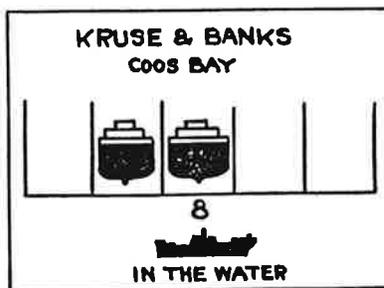
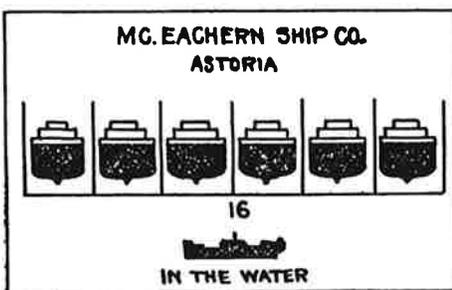
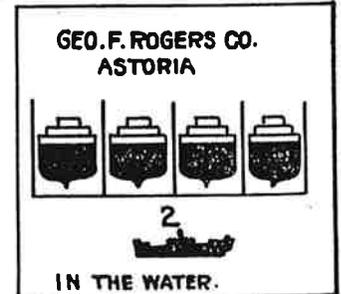
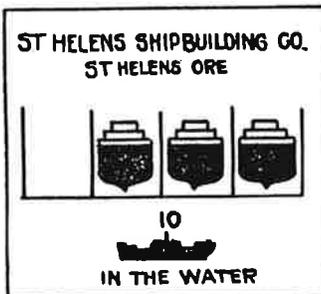
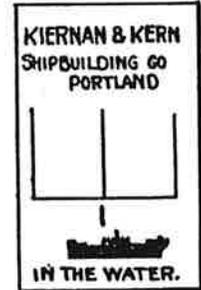
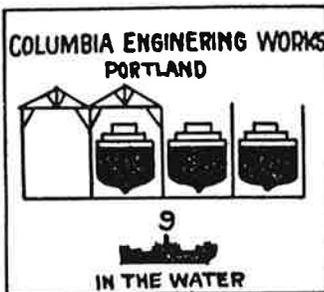
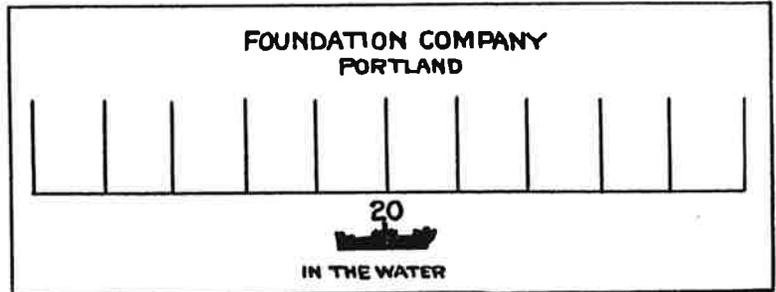
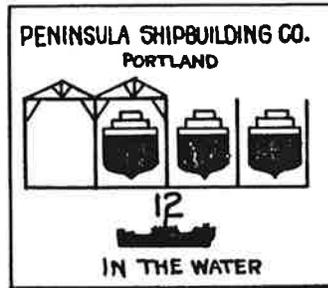
The Northwest Steel Co. yard and the G. M. Standifer Construction Co. are continuing in the business, the former with contracts on hand for seven steel tankers of 12,000 D. W. tons each, the latter with contracts on hand for five steel tankers of 12,000 D. W. tons each.

The Albina Engine & Machine Works is doing a general ship repair business in addition to many other well established plants. The Columbia River Shipbuilding Co. has ceased operations.

# WOOD SHIP BUILDING RECORD

## COLUMBIA RIVER DISTRICT

DECEMBER 31 1918



## WOOD SHIPBUILDING

Wood ship construction might naturally be expected as a local development where the timber supply is available.

Oregon led in the production of wood ships during the emergency shipbuilding programme.

A record of the yards in operation with the condition of business as it stood December 31, 1918, is shown on chart opposite.

Some of these yards have remained in the business, on a small scale, until the ordinary commercial demand for ships of this type increases.

Many of these yards have been converted to other uses, since much of the high grade equipment is available and the yard locations are desirable for other industries.

Beginning with launchings in 1916 there had been placed in the water on December 31, 1918 - 152 wood ship hulls with a total tonnage of 446,100 deadweight tons and the hulls on the ways totalled 55.