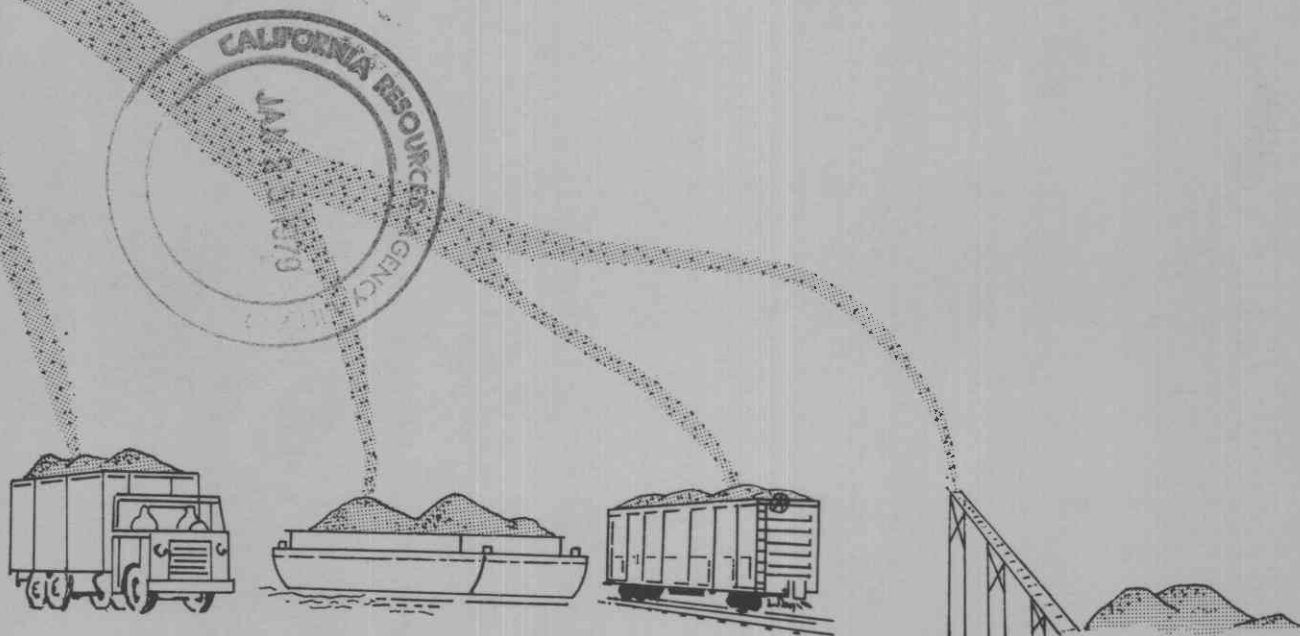


FLOWS OF MILL RESIDUES
TO
PULP AND BOARD MANUFACTURERS,
WASHINGTON, OREGON,
AND CALIFORNIA, 1968

GROVER A. CHOATE



ABSTRACT

Twelve million tons of residues from lumber and veneer and plywood mills went to pulp and board use in 1968; nearly 88 percent went to domestic mills and most of the remainder to overseas export. Of the 10.3 million tons that went to domestic mills, 83 percent went to pulpmills (average distance 82 miles) and 17 percent to board mills (30 miles); 74 percent was shipped by lumber mills (68 miles) and 26 percent by veneer and plywood mills (88 miles). Fifty percent of residues to domestic mills went by truck (37 miles), 35 percent by rail (147 miles), 6 percent by barge (59 miles), and 9 percent by onsite transport (1 mile). One-fourth of the shipments to domestic mills were between mills of the same ownership and three-fourths between mills of different ownerships. Percentage of sawmill residues going by truck decreased with increasing sawmill size; rail, onsite, and barge use increased. Nine million tons of wood residues of sawmills and veneer and plywood mills were either unused or went for fuel in 1968. Residue volumes, shipping distances, etc., varied among the eight pulp and board manufacturing areas used in the report.

Keywords: Freight transportation, pulpmills, sawmills, manufacturing.

FOREWORD

This report presents statistics on shipments of residues during 1968 from sawmills and veneer and plywood mills in Washington, Oregon, and California to pulp and board mills within this three-State area. Information also is shown on shipments of chips from sawmills and veneer and plywood mills directly to export. Not included, however, are data on export shipments from pulp and board mills either to export or to other pulp and board mills, or on import shipments from neighboring States (Idaho and Montana) or British Columbia. Because of these limitations of the data, as well as for other reasons, statistics in this report cannot be used to estimate 1968 consumption of residues by pulp and board mills or the actual volume of exports. The statistics shown here are intended only to bring out intrinsic features of shipments--amount and average distance by various types of carriers (truck, rail, etc.), areas of origin and destination, and types of shipping and receiving mills.

Information in a recent report on cost of residue shipment in Oregon in relation to such factors as distance, type of carrier, and type of residue should provide a basis for further economic

analysis of residue movements on the west coast. The report appears in Volume 21, Number 10, of the *Forest Products Journal*--"Transportation Costs in Oregon for Wood and Bark Residues" by Paul E. Hyde and Stanley E. Corder.

The statistics shown in this report result from surveys conducted in 1969 by the Forest Survey staff of the Pacific Northwest Forest and Range Experiment Station in cooperation with the State of Washington Department of Natural Resources, the State of Oregon Department of Forestry, and the State of California Division of Forestry. Members of these agencies visited practically all primary wood processing mills in the three States to collect survey information. Personal visits were made at most mills; contacts by phone were necessary in a few cases. Reports which have been published as a result of these surveys (and as referenced in the body of this report) do not include most of the statistics shown here on residue shipments. On the other hand, certain data from these published reports are repeated here to provide pertinent background information.

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HIGHLIGHTS

- In 1968, 56 percent of the 728 west coast sawmills and 88 percent of the 180 veneer manufacturing mills produced residues for domestic or foreign manufacture of pulp and board.
- Of the 12 million tons of residues generated by lumber and veneer and plywood mills in 1968, nearly 88 percent went to west coast pulp and board mills and most of the remainder to overseas export facilities.
- Of the 10.3 million tons of residues going to west coast pulp and board mills, 82 percent were intrastate shipments.
- Of the shipments to west coast pulp and board mills, 83 percent went to pulpmills (average distance 82 miles) and 17 percent to board mills (30 miles).
- Of shipments to pulp and board mills, 74 percent came from lumber mills (68 miles), and 26 percent from veneer and plywood mills (88 miles).
- Of the residues shipped to west coast pulp and board mills, 50 percent went by truck (average distance 37 miles), 35 percent by rail (147 miles), 6 percent by barge (59 miles), and 9 percent by onsite transportation (1 mile).
- Of the shipments from sawmills and veneer and plywood mills to west coast pulp and board mills, 25 percent were between mills of the same ownership (average distance 50 miles) and 75 percent between mills of different ownership (82 miles).
- The percentage of sawmill residues going by truck decreased with increasing sawmill size, while rail, onsite, and barge use increased.
- More than 9 million tons of wood residues of sawmills and veneer and plywood mills were either unused or went for fuelwood.

BACKGROUND

A need for more information on residues from the manufacture of lumber and veneer as a source of raw material for pulp and board^{1/} plants stems from the vastly increased use of such material during the last couple of decades and prospects for still greater use. In 1952, only 14 percent of the slabs, edgings, shavings, sawdust, veneer clippings, and similar material from the wood content of logs processed by lumber, veneer, and plywood mills on the west coast^{2/} was used as a source of fiber for pulp and board manufacture. By 1968, 71 percent of the wood residues went for such use. Pulp and board mills have come to rely largely on chips and other residues for their wood supply; in 1968, residues accounted for 82 percent of the pulpwood consumption of west coast mills--68 percent in Washington, 95 percent in Oregon, and 99 percent in California.

The rapid increase in foreign markets for pulpwood chips is another very significant development during recent years. The 2.1 million tons of chips exported from west coast ports in 1970 undoubtedly came mainly from mill residues and represented a continuation of the annual increases that have occurred since 1965 (the first year for which there were significant exports).^{3/}

¹Board mills consist of those producing hardboard, particle board, and insulation board.

²"West coast" in this report refers to the area made up of Washington, Oregon, and California.

³David R. Darr. Production, prices, employment, and trade in Northwest forest industries, fourth quarter 1970. Pac. Northwest Forest & Range Exp. Stn., USDA Forest Serv., 57 p., illus., 1971.

Although several publications^{4/} describe the patterns of roundwood flows to pulp and board mills in west coast States, relatively little is known about movements of residues between individual types of residue-producing and-consuming mills. However, with the volume of residues going into pulp and board use reaching a total of 12 million tons (in 1968) and becoming by far the principal source of wood supply, there are mounting demands for more information useful to people concerned with transportation and present and potential markets for residue. Although individual mills and corporations are very familiar with the economic aspects of their respective marketing (or purchasing) situations for chips and other pulping residues, practically nothing has been published showing the composite situation for large areas

⁴John W. Austin. Timber flows and utilization patterns in the Douglas-fir region, 1966. Pac. Northwest Forest & Range Exp. Stn., USDA Forest Serv. Res. Pap. PNW-89, 89 p., illus., 1969.

John A. Bergvall and Donald R. Gedney. Washington mill survey: Wood consumption and mill characteristics, 1968. A joint study by State of Wash., Dep. Natur. Resour., and Pac. Northwest Forest & Range Exp. Stn., USDA Forest Serv., 119 p., illus., 1970.

Eugene R. Manock, Grover A. Choate, and Donald R. Gedney. Oregon timber industries: Wood consumption and mill characteristics, 1968. A joint study by State of Oreg., Dep. For., and Pac. Northwest Forest & Range Exp. Stn., USDA Forest Serv., 122 p., illus., 1970.

Brian R. Barrette, Donald R. Gedney, and Daniel D. Oswald. California timber industries, 1968: Mill characteristics and wood supply. A joint study by the Calif. Div. For., and the Pac. Northwest Forest & Range Exp. Stn., USDA Forest Serv., 117 p., illus., 1970.

such as the west coast States. What, for example, are distances that mills of various types ship pulping residues? What is the relationship between distance and type of carrier (truck, rail, etc.)? How do these relationships vary from one part of the west coast to another? Data for 1968, shown in the tables and discussed briefly in the text, furnish many of these types of information. However, it is not an objective of this report to interpret the data and reach economic conclusions. Such uses of the data are far too numerous and varied and are left to those concerned with making detailed studies.

Eight geographic areas used to describe west coast residue production and use

In 1968, west coast residues destined for pulp and board use were transported from 570 lumber and veneer and plywood mills to 86 pulp and board mills^{5/} as well as to several export locations. The pattern of flow of residues is described in this report in terms of eight pulp and board manufacturing areas. These areas, along with the location of pulp and board mills, are shown in figure 1. In delineating areas (along county and, in some places, State lines) the objective was to group pulp and board manufacturing facilities in geographic areas small enough to make data on residue movement sensitive without disclosure of data for individual mills. These areas approximate both Forest Survey reporting areas and in some instances State-delineated economic planning areas.

Areas vary substantially with respect to number of mills of various type (tables 1 and 2) and their installed capacity (tables 3 and 4). The Lower Columbia and Interior California Areas lead with respect

to installed capacity of sawmills. The West Central and Southwest Oregon Areas have the biggest veneer and plywood industry and also lead in board manufacturing facilities. The Northwest Washington and Lower Columbia Areas have by far the greatest concentration of pulpmills and pulp-making capacity.

A number of other factors, external to the physical characteristics of mills, also influence use and movement of residues. Size of area is, of course, a primary consideration. Another is the volume of available timber and the characteristics of the trees--size, species, quality, etc. In the large Eastern Oregon Area, for example, fuller utilization of residues is discouraged by the relatively great distance to markets from the widely dispersed residue-producing mills. Markets and transportation facilities also have very important effects on the amount of industrial development; the Lower Columbia Area, for example, is well favored with rail, truck, water, and port facilities for distributing timber to numerous domestic and overseas markets.

Fifty-six percent of the west coast sawmills and 88 percent of the veneer and plywood mills reported production of residues for pulp and board manufacturing in 1968. Percentages varied considerably among areas, particularly in the case of sawmills as shown below:

<u>Area</u>	<u>Sawmills</u>	<u>Veneer and plywood mills</u>
Northwest Washington	44	60
Lower Columbia	58	94
West Central Oregon	78	85
Southwest Oregon	75	98
Coastal California	59	94
Eastern Washington	45	75
Eastern Oregon	52	89
Interior California	<u>45</u>	<u>100</u>
Average	56	88

⁵Not included are one pulpmill that reported no use of residues and three mills that manufactured roofing felt.

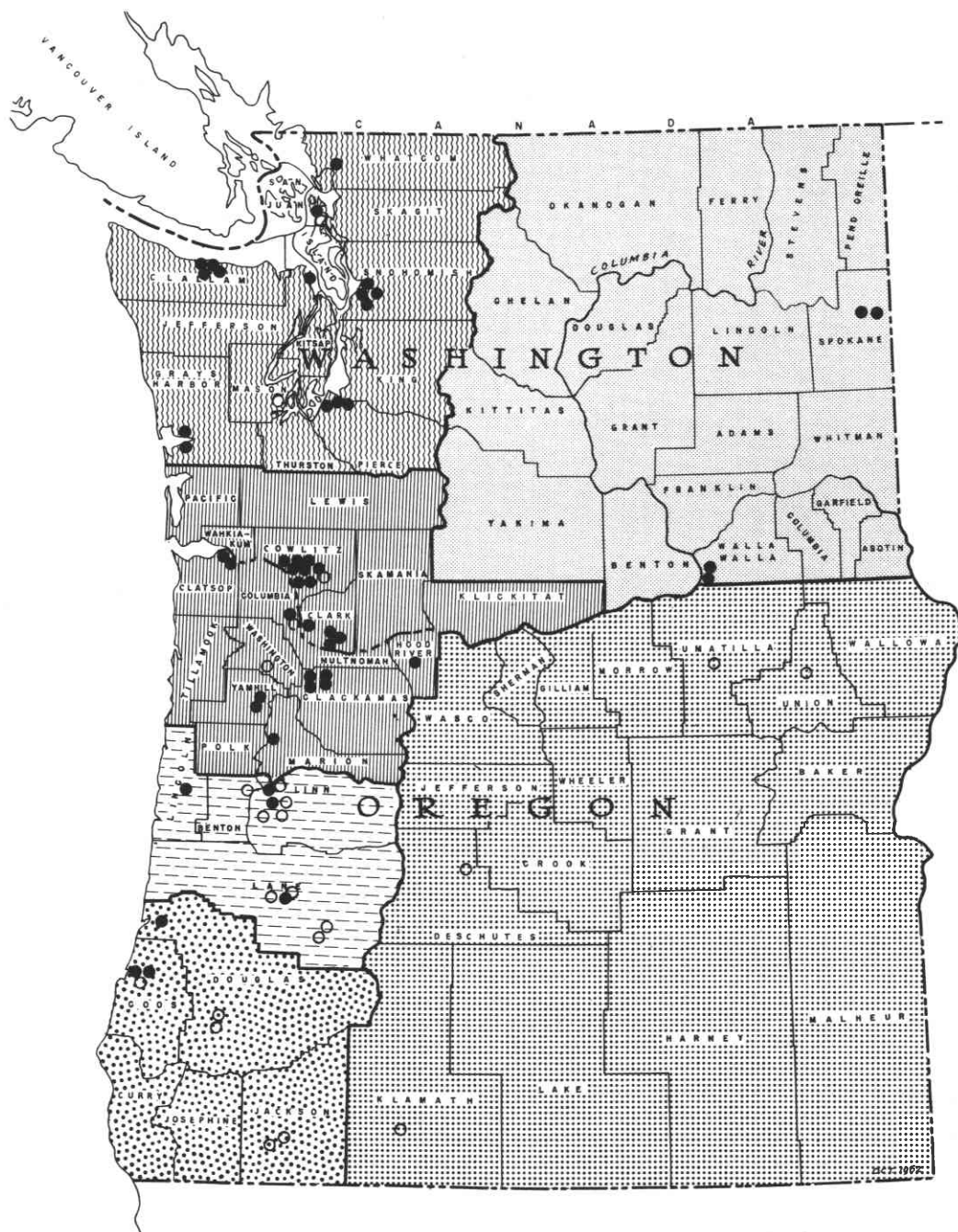


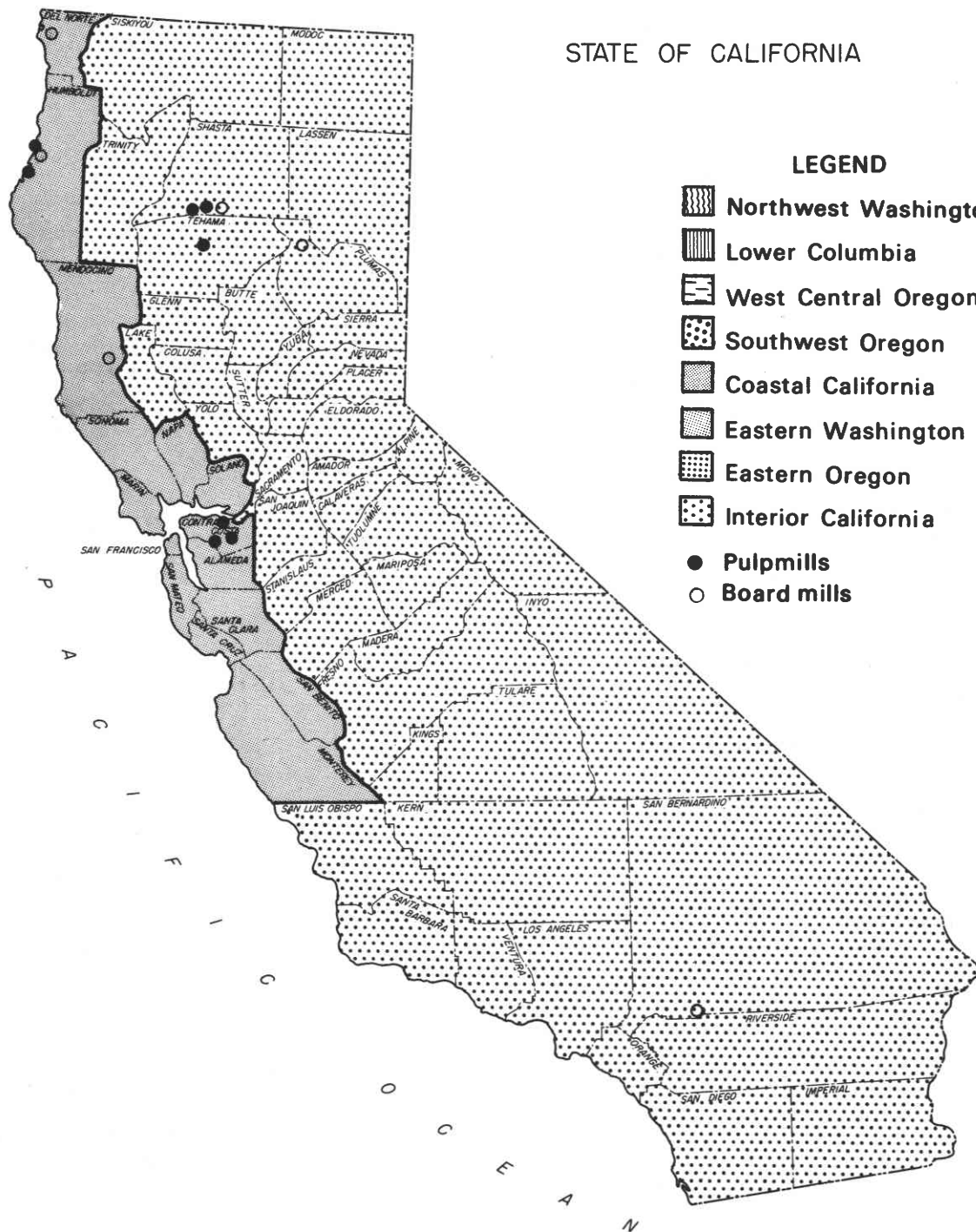
Figure 1.—Pulp and board manufacturing areas and mill locations, 1968. ➡

STATE OF CALIFORNIA

LEGEND

-  Northwest Washington
-  Lower Columbia
-  West Central Oregon
-  Southwest Oregon
-  Coastal California
-  Eastern Washington
-  Eastern Oregon
-  Interior California

- Pulpmills
- Board mills



Similar comparisons by States show that 68 percent of the sawmills in Oregon produced residues for pulp and board use, but only 46 percent in Washington and 51 percent in California. For veneer and plywood mills, percentages were 96 in California, 91 in Oregon, and 76 in Washington.

An underlying factor related to the relatively high percentages shown above for sawmills in the West Central Oregon and Southwest Oregon Areas is the high percentage of large mills, which are far more likely to produce residues for pulp and board use than are small mills:

<u>Sawmill-size class</u>	<u>Percentage</u>
(Board-foot capacity per 8 hours)	
120,000 plus	96
80,000-119,000	84
40,000-79,000	66
Less than 40,000	<u>19</u>
Average	56

The fact that a great many large mills come under the same ownership as pulp and board mills (and are commonly located nearby) enhances their market opportunities for residues. Smaller mills, on the other hand, are less likely to be corporately owned with few situated as part of an integrated operation, and their relatively low volume of residue production makes utilization of residue more costly.

DISTRIBUTION PATTERNS

Shipments mainly to domestic pulp and board plants

Nearly 12 million tons of chips and other wood residues (mainly sawdust and shavings) were shipped from lumber, veneer, and plywood mills to pulp and board mills, export facilities,^{6/} and other mills^{7/} (table 5).

<u>Destination</u>	<u>Million tons</u>	<u>Percent</u>
Pulp and board mills	10.26	88
Export	1.42	12
Other mills	.01	(8/)
Total	<u>11.69</u>	<u>100</u>

⁶Export shipments shown in this report consist only of those going directly from lumber and veneer and plywood mills to export facilities; they do not include reshipments to export from pulp and board mills.

⁷"Other mills" are those which manufactured roofing felt.

⁸Less than 0.5 percent.

Of the 11.7 million tons that went to domestic and export use, 8.6 million tons came from lumber mills and 3.1 million from veneer and plywood mills.

Although details of export shipments are of subordinate concern in this report, they will be summarized briefly before getting into the major topic of shipments to domestic mills.

Of the 1.42 million tons of residues reported as shipped for export, 0.98 million tons was produced by lumber mills (69 percent) and 0.44 million tons by veneer and plywood mills (31 percent). Most of this volume was produced in Southwest Oregon:

<u>Area</u>	<u>Export volume</u> (Percent)
Northwest Washington	3
Lower Columbia	7
West Central Oregon	6
Southwest Oregon	75
Coastal California	1
Eastern Washington	--
Eastern Oregon	--
Interior California	8
Total	100

The average hauling distance of export shipments^{9/} was 54 miles--considerably less than the 73 miles to pulp and and board mills. This relatively short haul resulted mainly from the high percentage of export shipments that moved to ports by onsite transport^{10/}--25 percent as compared with only 9 percent for material moving to pulp and board mills. Railroads carried only a very small amount to export facilities but accounted for 35 percent of shipments to pulp and board mills. The onsite shipments were largely at Coos Bay in the Southwest Oregon Area.

Oregon the leading State in shipments to pulp and board mills

Of the 10.3 million tons of residue material that moved to west coast pulp and board plants, nearly three-fifths came from mills in Oregon; California and Washington each accounted for about one-fifth (table 6). More than four-fifths of the shipments did not cross State lines. As shown in figure 2, the principal interstate shipments were from Oregon to Washing-

ton; these were largely to mills at Longview and Camas within the Lower Columbia Area.

Lower Columbia Area led in shipments to and receipts by pulp and board mills

Pulp and board mills in the Lower Columbia Area provided a major market for residues. These mills with 30 percent of the installed capacity on the west coast attracted 24 percent of the residues (table 7). Other leading areas in terms of markets were West Central Oregon (20 percent) and Southwest Oregon (15 percent).

The Lower Columbia Area with its advantageous location with respect to timber resources, transportation, and markets led all other areas in shipments of residues to pulp and board mills. This area accounted for 33 percent of west coast shipments, followed by the West Central Oregon Area with 20 percent.

Sixty-nine percent of the volume of shipments from west coast lumber, veneer, and plywood mills were to pulp and board mills within the area of shipment. It follows, of course, that the same percentage of receipts by pulp and board mills were within-area. However, there were substantial variations among areas in the extent that their shipments and receipts were within-area. Northwest Washington and Coastal California provided markets for practically all residues shipped from their lumber, veneer, and plywood mills. On the other hand, Eastern Oregon, which has only four board mills and no pulpmills, had a market for only 19 percent of the residue shipments; the remainder, of course, went to other areas. From the standpoint of receipts by pulp and board mills, the leading areas in terms of percentage of their material coming from within-area mills were Interior California (96 percent) and Northwest Washington (84 percent); the

⁹All average distances shown in this report were derived by weighting distance of movement by tonnage involved.

¹⁰Onsite transportation consists of conveyor systems and forced-air pipelines for the short-distance movement of residues from producing sources to pulp or board stockpiles within a mill complex or to nearby export facilities. Actual distances undoubtedly averaged less than the 1 mile arbitrarily assigned to all such movements.

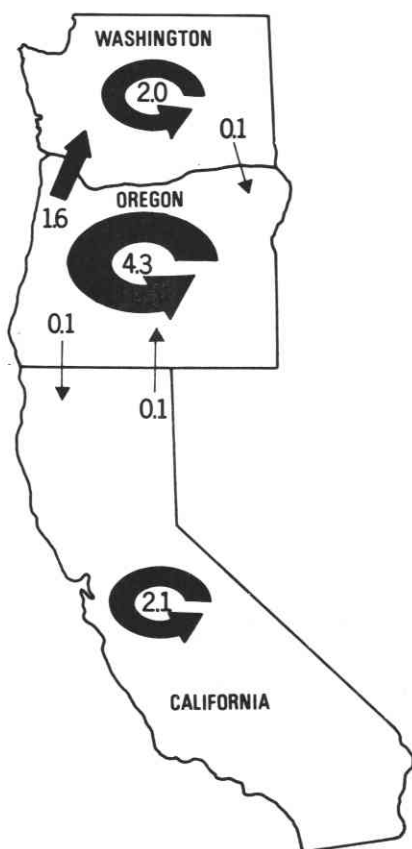


Figure 2.—Shipments (million tons) to pulp and board mills within and between States, 1968.

Eastern Washington Area was low in this respect with only 46 percent coming from within the area.

Shipments to pulp and board mills mainly from lumber mills; trucks the principal carrier

Seventy-four percent of the shipments to pulp and board mills come from lumber mills and 26 percent from veneer and plywood mills (table 7). The relative importance of the two sources of shipments varied considerably among areas depending largely on the number and size of mills of each type; only in Southwest Oregon did veneer and plywood mills come close to

lumber mills as a source of supply--49 percent.

The relative importance of the various types of carrier depended in large measure on distance of shipment. However, as shown by the following tabulation (based on table 7), trucking was the most important individual method:

<u>Carrier</u>	<u>Amount</u>	<u>Average distance</u>
	(Percent)	(Miles)
Truck	50	37
Rail	35	147
Barge	6	59
Onsite	9	1
All carriers	100	73

Because of economies in shipping costs, railroads were more important for longer shipments. For example, shipments from the Eastern Washington Area to the Northwest Washington and Lower Columbia Areas were of much longer than average distance for the west coast and were all made by rail.

Opportunities to use barge and rail transportation were relatively limited or nonexistent in some areas. Barge shipments were not generally feasible in California or Eastern Oregon. In the Coastal California Area a lack of east-west rail lines and no rail lines extending north of Eureka resulted in only 6 percent of residues moving by rail.

Pulpmills a much bigger market than board mills

Pulpmills, with their production capacity much greater than board mills (table 4), consumed by far the greater proportion (83 percent) of the residues that went to pulp and board mills in 1968 (tables 8 and 9 and figs. 3-5). As shown by the

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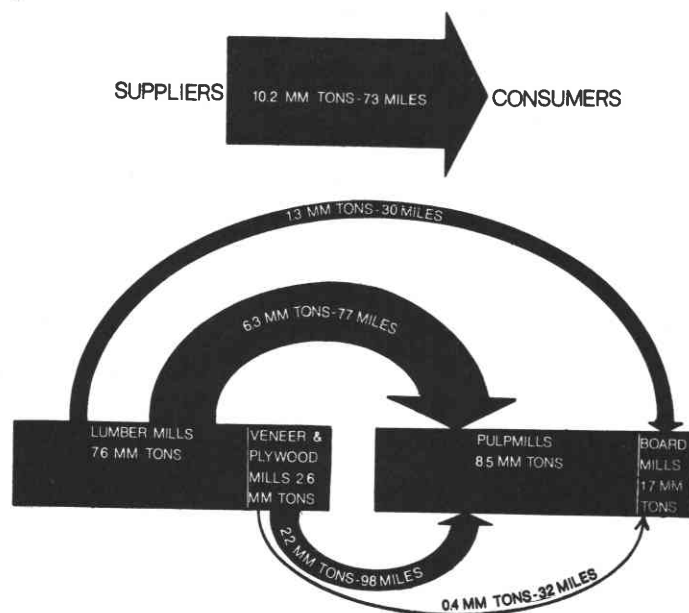


Figure 3.—Amount and average distance of shipment of residues between types of mills, 1968.

following breakdown, the board mill market for residues was greater than the pulpmill market in only three areas.

<u>Area</u>	<u>Residue receipts by:</u>	
	<u>Pulpmills</u>	<u>Board mills</u>
	(Thousand tons)	
Northwest Washington	1,062	21
Lower Columbia	3,266	150
West Central Oregon	1,692	342
Southwest Oregon	455	564
Coastal California	1,467	304
Eastern Washington	405	--
Eastern Oregon	--	163
Interior California	168	200
Total	8,515	1,744

Shipments to pulpmills differed from those to board mills in that they were longer (by both truck and rail) and a larger proportion went by rail (tables 8 and 9 and fig. 6). These differences largely reflect the greater distances that pulpmills generally reach out for material because of their much bigger

consumption per mill. Another reason is that pulpmills are less flexible as to location in relation to sources of supply; they must have substantial volumes of water and have greater needs for rail and water transportation.

Type of carrier and average distance of shipment related to mill ownership

One of the objectives of this study was to assess ownership affiliation of mills as a factor influencing type of carrier and average distance of residue shipment. In other words, do type of carrier and average distance between residue generating and consuming mills that have common ownership differ from carrier and distance between mills of unrelated ownership?

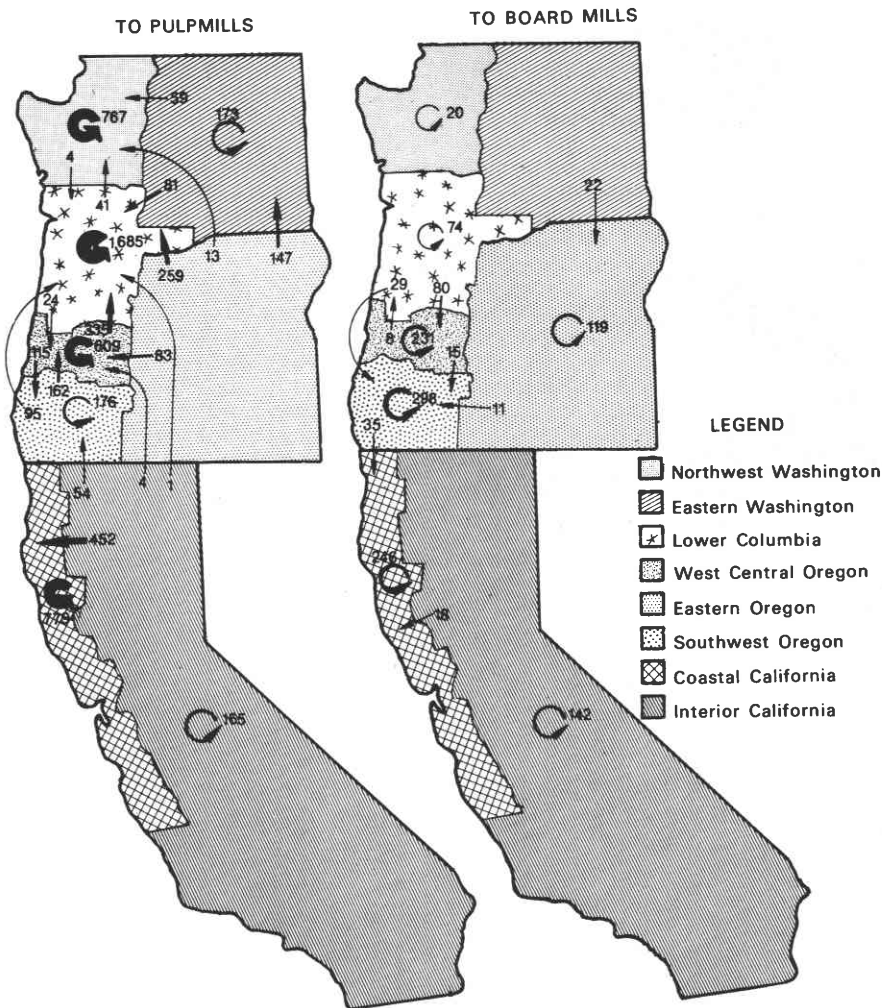


Figure 4.—Shipments (thousand tons) from lumber mills to pulpmills and board mills within and between areas, 1968.

Twenty-five percent of the 10.3 million tons of residues going to pulp and board mills came from sawmills and veneer and plywood mills of the same ownership (table 10). The proportion varied among areas from a high of 41 percent for Northwest Washington to a low of 20 percent for Eastern Oregon. Percentage of west coast shipments to mills

of the same ownership was as follows:

<u>Shipping mills</u>	<u>Consuming mills</u>		
	<u>Pulp</u>	<u>Board</u>	<u>All</u>
	---	Percent	----
Lumber	23	20	22
Veneer and plywood	25	79	33
Average	23	33	25

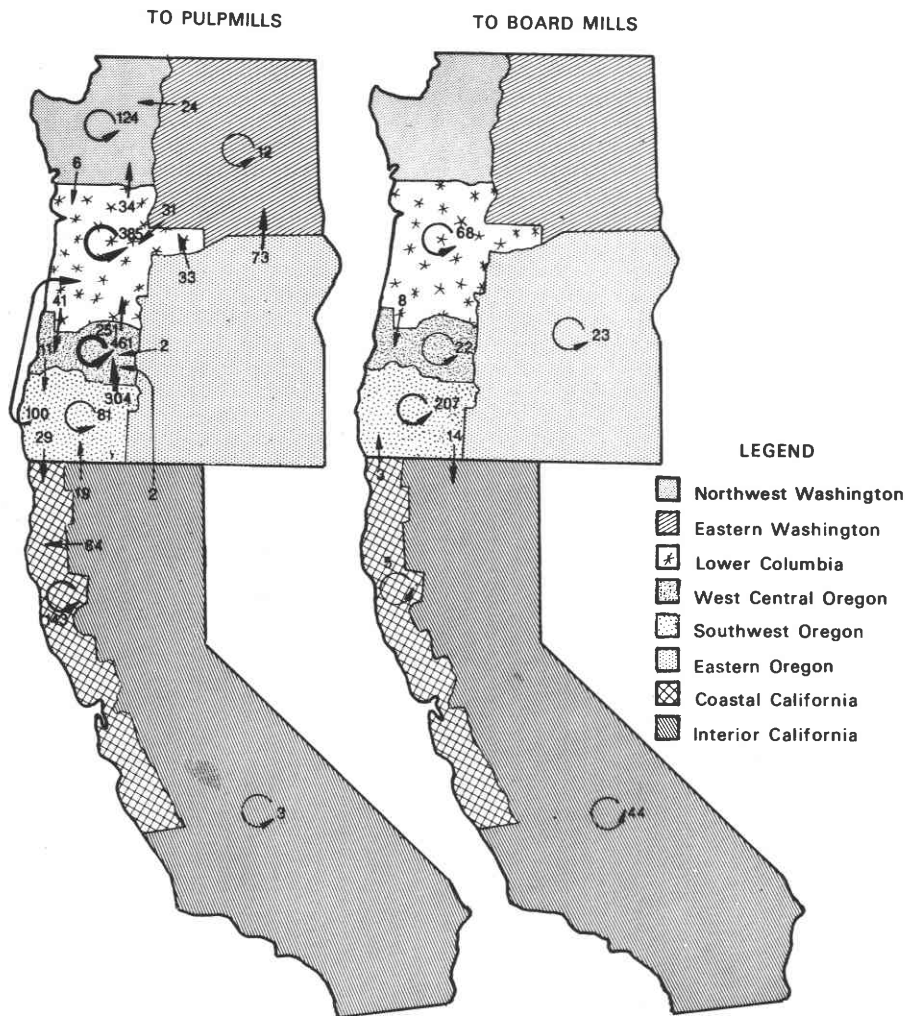


Figure 5.—Shipments (thousand tons) from veneer and plywood mills to pulpmills and board mills within and between areas, 1968.

Differences exist between the two ownership classes in use of types of carrier and average distance of shipments.

<u>Carrier</u>	<u>Same ownership</u>	
	<u>Shipments</u> (Percent)	<u>Distance</u> (Miles)
Truck	33	24
Rail	33	125
Barge	3	40
Onsite	<u>31</u>	<u>1</u>
All carriers	100	50

<u>Carrier</u>	<u>Different ownership</u>	
	<u>Shipments</u> (Percent)	<u>Distance</u> (Miles)
Truck	55	40
Rail	36	154
Barge	7	61
Onsite	<u>2</u>	<u>1</u>
All carriers	100	82

A principal reason for the differences shown above is that many mills of the same ownership are physically close together as

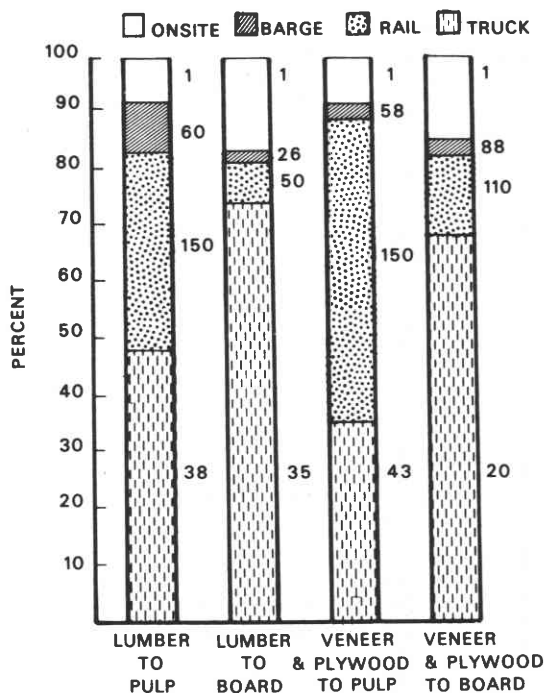


Figure 6.—Residue shipments—types of mills—carriers—average distances—1968. (Numbers are average distance in miles.)

components of integrated operations and can use onsite equipment to move residues. Undoubtedly residues were an important consideration by many large pulp companies in acquisition of mills. Comparisons similar to the above tabulation can also be made for individual areas; however, only average distances by ownership classes are summarized here:

Area	Mill ownership	
	Same	Different
	---- Miles ----	
Northwest Washington	15	34
Lower Columbia	28	49
West Central Oregon	22	63
Southwest Oregon	53	114
Coastal California	31	47
Eastern Washington	214	205
Eastern Oregon	130	170
Interior California	66	129
Average	50	82

It is apparent from the above that only the Eastern Washington Area shows a greater distance for shipments between mills of the same ownership. This stems from the fact that most shipments go long distances (no onsite shipments) and differences in ownership are washed out.

Type of carrier and average distance of shipment related to sawmill size

Almost half the 7.6 million tons of residues shipped by sawmills to pulp and board plants in 1968 came from sawmills of the largest size class. This is shown by table 11 which is summarized as follows:

Mill-size class	Percent
(Board-foot capacity per 8 hours)	
120,000 plus	49
80,000-119,000	31
40,000-79,000	18
Less than 40,000	2
Total	100

The two areas in California were the only ones in which the 120,000-bd. ft. plus mills did not lead in residue output; in these areas, 80,000-to 119,000-bd. ft. mills shipped the greatest amount--45 percent in both cases. This results from California's comparatively few largest class mills in relation to the second class --less than half as many (table 2).

The percentage of shipments that went by each carrier type, as well as the average distance of such shipments, varied substantially from one mill-size class to another (table 11 and fig. 7). Truck use decreased in relative importance with increasing mill size. Onsite transport was important principally to large mills. For all mill-size classes, trucking was of greater importance for shipments to board mills than to pulpmills; this

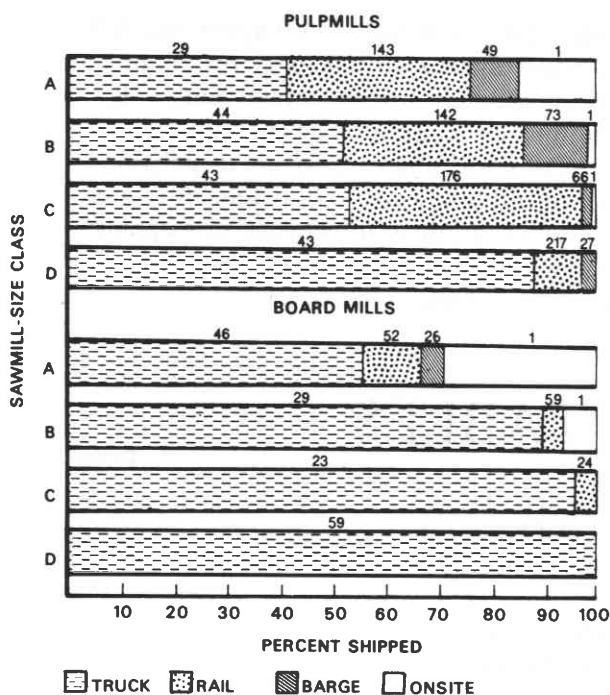


Figure 7.—Residue shipments—sawmill-size classes—types of consuming mills—average distances—1968.
(Numbers are average distance in miles.)

occurred even where trucking distances to board mills were greater.

Large volume of wood residues unused or used for fuel

More than 9 million tons of residues suitable for pulp and board use that were generated by lumber and veneer and plywood mills were either unused (47 percent) or went for fuel (53 percent) in 1968 (table 12). More than four-fifths of this material was sawmill residue, the remainder from veneer and plywood mills. Following is a breakdown by type and industry source of unused residue and residue used for fuel.

	Type of residue ¹¹			<u>1/</u>
<u>Industry</u>	<u>Coarse</u>	<u>Medium</u>	<u>Fine</u>	<u>Total</u>
	----- Thousand tons -----			
Lumber	2,208	1,692	3,743	7,643
Veneer and plywood	<u>1,446</u>	<u>--</u>	<u>174</u>	<u>1,620</u>
Total	3,654	1,692	3,917	9,263

As shown below, the Interior California Area had the largest total volume of unused and burned sawmill residues; West Central Oregon had the largest volume of similar material from veneer and plywood mills.

Area	Industry		
	Lumber	Veneer and plywood	Total
-- Thousand tons --			
Northwest Washington	773	289	1,062
Lower Columbia	1,002	214	1,216
West Central Oregon	760	464	1,224
Southwest Oregon	763	371	1,134
Coastal California	1,159	130	1,289
Eastern Washington	414	14	428
Eastern Oregon	798	50	848
Interior California	1,974	88	2,062
Total	7,643	1,620	9,263

The high volume shown above for Interior California results to a considerable extent from the relatively large proportion (75 percent) of the smaller mills that did not utilize residues for pulp or board (table 2). In the Coastal California Area, which also had a large volume of unused and fuelwood residues, 73 percent of smaller mills did not utilize residues for pulp or board.

The 1968 volume of 4 million tons of unused material and 5 million tons that went for fuel characterize the potential

¹¹ See footnotes 1, 2, and 3 to table 12.

additional annual supply suitable for pulp and board manufacture. Reasons that some or all of this material did not go for such use varied with individual mills. Some of the mills--principally the smaller ones--did not feel it profitable to install equipment for chipping residues in excess of their fuel needs or markets. Other mills shipped part of their residues to

pulp and board mills or export but felt it advantageous to use part or all of the remainder for industrial fuel. In the future, a greater proportion of residues will undoubtedly go to pulp and board mills or export if prices for such material increase in relation to shipping costs and values for other uses, especially fuel.

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Table 1.—Number of mills by type of mill, area, and State, 1968

Area and State	Type of mill												
	Lumber		Veneer and plywood ^{1/}		Pulp ^{2/}					Board			
	All	Producing residues for pulp and board	All	Producing residues for pulp and board	All	Sulfite	Sulfate	Ground-wood	Semi-chemical	All	Hard-board	Particle-board	Insulation board
Northwest Washington	100	44	20	12	16	7	5	3	1	2	1	--	1
Lower Columbia	151	88	35	33	22	7	7	7	1	4	2	1	1
West Central Oregon	79	62	46	39	4	1	3	--	--	9	4	5	--
Southwest Oregon	72	54	41	40	3	1	1	--	1	5	1	4	--
Coastal California	93	55	16	15	5	--	3	1	1	3	1	2	--
Eastern Washington	58	26	4	3	4	1	1	1	1	--	3 ^{7/2}	--	--
Eastern Oregon	52	27	9	8	--	--	--	--	--	4	2	2	--
Interior California	123	55	9	9	3	--	1	2	--	3	--	3	--
Washington	212	97	38	29	32	11	11	7	3	3	1	1	1
Oregon	300	204	117	106	17	6	6	4	1	21	9	11	1
California	216	110	25	24	8	--	4	3	1	6	1	5	--
Total, west coast	728	411	180	159	57	17	21	14	5	30	11	17	2

^{1/} Not included are 27 mills (5 in Washington, 21 in Oregon, and 1 in California) that lay up plywood only from veneer produced in other mills and therefore do not generate significant amounts of residue.

^{2/} Not included are 3 mills in California that manufacture roofing felt.

^{3/} 1 mill also manufactures insulation board.

Table 2.—Number of sawmills by mill-size class, area, and State, 1968

Area and State	Mill-size class ^{1/}								All classes	
	D		C		B		A		All	Producing residues for pulp and board
	All	Producing residues for pulp and board	All	Producing residues for pulp and board	All	Producing residues for pulp and board	All	Producing residues for pulp and board		
Northwest Washington	68	15	11	9	8	8	13	12	100	44
Lower Columbia	77	18	33	30	19	19	22	21	151	88
West Central Oregon	22	9	20	19	21	18	16	16	79	62
Southwest Oregon	20	3	9	8	23	23	20	20	72	54
Coastal California	23	1	26	12	27	26	17	16	93	55
Eastern Washington	29	5	19	13	7	5	3	3	58	26
Eastern Oregon	13	1	20	12	10	6	9	8	52	27
Interior California	26	1	43	16	40	25	14	13	123	55
Washington	127	25	42	33	19	17	24	22	212	97
Oregon	102	26	70	58	69	62	59	58	300	204
California	49	2	69	28	67	51	31	29	216	110
Total, west coast	278	53	181	119	155	130	114	109	728	411

^{1/} Mill-size classes identified as follows: Class A mills = 120,000+ board-foot capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

Table 3.—Installed 8-hour capacity of sawmills and veneer and plywood mills by type of mill, sawmill-size class, area, and State, 1968

Area and State	Sawmills					Veneer and plywood mills ^{2/}	
	All sawmills	Mill-size class ^{1/}				Veneer only	Veneer and layup
		D	C	B	A		
----- Thousand board feet -----						Thousand square feet, 3/8-inch basis	
Northwest Washington	4,741	822	628	760	2,531	623	1,908
Lower Columbia	8,630	932	1,756	1,810	4,132	2,760	4,418
West Central Oregon	6,679	394	1,208	2,000	3,077	3,508	4,821
Southwest Oregon	6,625	343	460	2,142	3,680	5,760	6,918
Coastal California	7,056	335	1,534	2,452	2,735	1,122	816
Eastern Washington	2,716	555	1,061	600	500	230	262
Eastern Oregon	4,164	144	1,265	905	1,850	492	530
Interior California	9,013	310	2,558	3,625	2,520	714	757
Washington	10,611	1,698	2,337	1,750	4,826	2,246	4,993
Oregon	22,944	1,492	4,041	6,467	10,944	11,127	13,864
California	16,069	645	4,092	6,077	5,255	1,836	1,573
Total, west coast	49,624	3,835	10,470	14,294	21,025	15,209	20,430

^{1/} Mill-size classes identified as follows: Class A mills = 120,000+ board-foot capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

^{2/} Not included are 27 mills with a combined capacity of 5,671,000 square feet (3/8-inch basis) that laid up only plywood from veneer produced in other mills and therefore did not generate significant amounts of residue.

Table 4.—Installed 24-hour capacity of pulp and board mills by type of mill, area, and State, 1968
(Tons)

Area and State	Type of pulpmill ^{1/}					Type of board mill				All pulp and board mills
	All types	Sulfite	Sulfate	Ground-wood	Semi-chemical	All types	Hard-board	Particle-board	Insulation board	
Northwest Washington	5,862	3,227	1,380	795	460	180	50	--	130	6,042
Lower Columbia	8,303	1,763	4,600	1,715	225	338	172	16	150	8,641
West Central Oregon	2,705	95	2,610	--	--	3,593	2,487	1,106	--	6,298
Southwest Oregon	890	85	550	--	255	1,430	190	1,240	--	2,320
Coastal California	2,055	--	1,790	40	225	890	450	440	--	2,945
Eastern Washington	740	80	450	40	170	--	--	--	--	740
Eastern Oregon	--	--	--	--	--	845	2/ 295	550	--	845
Interior California	325	--	150	175	--	570	--	570	--	895
Washington	11,020	4,210	4,930	1,025	855	196	50	16	130	11,216
Oregon	7,480	1,040	4,660	1,525	255	6,190	3,144	2,896	150	13,670
California	2,380	--	1,940	215	225	1,460	450	1,010	--	3,840
Total, west coast	20,880	5,250	11,530	2,765	1,335	7,846	3,644	3,922	280	28,726

^{1/} Not included are 3 mills in California that manufacture roofing felt.

^{2/} 155 tons of capacity can be used interchangeably to produce insulation board.

Table 5.—Amount and average distance of shipment of residues for pulp and board use, by area of origin, type of shipping mill, carrier, and type of destination, 1968

(Also on pages 18 and 19)

Area of origin and type of shipping mill	Carrier	Type of destination							
		Pulp and board mills		Export ^{1/}		Other		All types	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Northwest Washington: Lumber	Truck	459,999	5	--	--	--	--	459,999	5
	Rail	147,647	49	--	--	--	--	147,647	49
	Barge	175,934	64	--	--	--	--	175,934	64
	Onsite	8,143	1	38,076	1	--	--	46,219	1
	Total	791,723	26	38,076	1	--	--	829,799	25
Veneer and plywood	Truck	68,956	2	--	--	--	--	68,956	2
	Rail	32,046	56	--	--	--	--	32,046	56
	Barge	28,800	46	--	--	--	--	28,800	46
	Onsite	--	--	--	--	--	--	--	--
	Total	129,802	25	--	--	--	--	129,802	25
All types	Truck	528,955	5	--	--	--	--	528,955	5
	Rail	179,693	50	--	--	--	--	179,693	50
	Barge	204,734	61	--	--	--	--	204,734	61
	Onsite	8,143	1	38,076	1	--	--	46,219	1
	Total	921,525	26	38,076	1	--	--	959,601	25
Lower Columbia: Lumber	Truck	1,154,058	38	94,315	8	--	--	1,248,373	36
	Rail	247,047	80	--	--	--	--	247,047	80
	Barge	343,374	62	--	--	--	--	343,374	62
	Onsite	188,777	1	--	--	--	--	188,777	1
	Total	1,933,256	44	94,315	8	--	--	2,027,571	43
Veneer and plywood	Truck	309,205	43	--	--	--	--	309,205	43
	Rail	153,901	64	--	--	--	--	153,901	64
	Barge	27,000	53	--	--	--	--	27,000	53
	Onsite	45,736	1	--	--	--	--	45,736	1
	Total	535,842	46	--	--	--	--	535,842	46
All types	Truck	1,463,263	39	94,315	8	--	--	1,557,578	37
	Rail	400,948	74	--	--	--	--	400,948	74
	Barge	370,374	61	--	--	--	--	370,374	61
	Onsite	234,513	1	--	--	--	--	234,513	1
	Total	2,469,098	45	94,315	8	--	--	2,563,413	43
West Central Oregon: Lumber	Truck	696,291	28	--	--	--	--	696,291	28
	Rail	452,662	84	17,207	196	--	--	469,869	88
	Barge	22,255	4	--	--	--	--	22,255	4
	Onsite	141,574	1	--	--	--	--	141,574	1
	Total	1,312,782	44	17,207	196	--	--	1,329,989	46
Veneer and plywood	Truck	276,491	37	48,000	49	--	--	324,491	39
	Rail	391,694	107	17,468	180	--	--	409,162	110
	Barge	--	--	--	--	--	--	--	--
	Onsite	77,097	1	--	--	--	--	77,097	1
	Total	745,282	70	65,468	84	--	--	810,750	71
All types	Truck	972,782	31	48,000	49	--	--	1,020,782	32
	Rail	844,356	94	34,675	188	--	--	879,031	98
	Barge	22,255	4	--	--	--	--	22,255	4
	Onsite	218,671	1	--	--	--	--	218,671	1
	Total	2,058,064	53	82,675	107	--	--	2,140,739	55

^{1/} See footnote at end of table.

Table 5.—Amount and average distance of shipment of residues for pulp and board use, by area of origin, type of shipping mill, carrier, and type of destination, 1968—Continued

Area of origin and type of shipping mill	Carrier	Type of destination							
		Pulp and board mills		Export ^{1/}		Other		All types	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Southwest Oregon: Lumber	Truck	394,623	32	448,326	69	--	--	842,949	52
	Rail	226,654	187	13,082	13	--	--	239,736	177
	Barge	18,000	2	--	--	--	--	18,000	2
	Onsite	127,327	1	265,585	1	--	--	392,912	1
	Total	766,604	72	726,993	43	--	--	1,493,597	58
Veneer and plywood	Truck	214,168	24	296,671	68	--	--	510,839	50
	Rail	454,729	190	--	--	--	--	454,729	190
	Barge	29,600	86	--	--	--	--	29,600	86
	Onsite	37,756	1	47,717	1	--	--	85,473	1
	Total	736,253	128	344,388	59	--	--	1,080,641	106
All types	Truck	608,791	29	744,997	69	--	--	1,353,788	51
	Rail	681,383	189	13,082	13	--	--	694,465	185
	Barge	47,600	54	--	--	--	--	47,600	54
	Onsite	165,083	1	313,302	1	--	--	478,385	1
	Total	1,502,857	99	1,071,381	48	--	--	2,574,238	78
Coastal California: Lumber	Truck	903,315	43	--	--	4,800	73	908,115	43
	Rail	61,969	81	--	--	6,800	142	68,769	87
	Barge	--	--	--	--	--	--	--	--
	Onsite	59,381	1	--	--	--	--	59,381	1
	Total	1,024,665	43	--	--	11,600	113	1,036,265	44
Veneer and plywood	Truck	123,206	52	13,616	141	--	--	136,822	61
	Rail	4,640	59	--	--	--	--	4,640	59
	Barge	--	--	--	--	--	--	--	--
	Onsite	22,800	1	--	--	--	--	22,800	1
	Total	150,646	45	13,616	141	--	--	164,262	53
All types	Truck	1,026,521	44	13,616	141	4,800	73	1,044,937	45
	Rail	66,609	79	--	--	6,800	142	73,409	85
	Barge	--	--	--	--	--	--	--	--
	Onsite	82,181	1	--	--	--	--	82,181	1
	Total	1,175,311	43	13,616	141	11,600	113	1,200,527	45
Eastern Washington: Lumber	Truck	54,502	153	--	--	--	--	54,502	153
	Rail	280,718	198	--	--	--	--	280,718	198
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	335,220	191	--	--	--	--	335,220	191
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	66,850	293	--	--	--	--	66,850	293
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	66,850	293	--	--	--	--	66,850	293
All types	Truck	54,502	153	--	--	--	--	54,502	153
	Rail	347,568	216	--	--	--	--	347,568	216
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	402,070	208	--	--	--	--	402,070	208

^{1/} See footnote at end of table.

Table 5.—Amount and average distance of shipment of residues for pulp and board use, by area of origin, type of shipping mill, carrier, and type of destination, 1968—Continued

Area of origin and type of shipping mill	Carrier	Type of destination							
		Pulp and board mills		Export ^{1/}		Other		All types	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Eastern Oregon: Lumber	Truck	113,125	62	--	--	--	--	113,125	62
	Rail	471,667	207	--	--	--	--	471,667	207
	Barge	--	--	--	--	--	--	--	--
	Onsite	46,600	1	--	--	--	--	46,600	1
	Total	631,392	166	--	--	--	--	631,392	166
Veneer and plywood	Truck	37,058	52	--	--	--	--	37,058	52
	Rail	93,513	179	--	--	--	--	93,513	179
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	130,571	143	--	--	--	--	130,571	143
All types	Truck	150,183	59	--	--	--	--	150,183	59
	Rail	565,180	202	--	--	--	--	565,180	202
	Barge	--	--	--	--	--	--	--	--
	Onsite	46,600	1	--	--	--	--	46,600	1
	Total	761,963	162	--	--	--	--	761,963	162
Interior California: Lumber	Truck	260,279	59	105,178	105	--	--	365,457	72
	Rail	437,162	168	--	--	--	--	437,162	168
	Barge	--	--	--	--	--	--	--	--
	Onsite	138,464	1	--	--	--	--	138,464	1
	Total	835,905	107	105,178	105	--	--	941,083	106
Veneer and plywood	Truck	21,100	89	13,000	137	--	--	34,100	107
	Rail	66,682	162	--	--	--	--	66,682	162
	Barge	--	--	--	--	--	--	--	--
	Onsite	44,015	1	--	--	--	--	44,015	1
	Total	131,797	96	13,000	137	--	--	144,797	100
All types	Truck	281,379	62	118,178	108	--	--	399,557	75
	Rail	503,844	167	--	--	--	--	503,844	167
	Barge	--	--	--	--	--	--	--	--
	Onsite	182,479	1	--	--	--	--	182,479	1
	Total	967,702	105	118,178	108	--	--	1,085,880	106
Total, west coast: Lumber	Truck	4,036,192	37	647,819	66	4,800	73	4,688,811	41
	Rail	2,325,526	146	30,289	117	6,800	142	2,362,615	145
	Barge	559,563	58	--	--	--	--	559,563	58
	Onsite	710,266	1	303,661	1	--	--	1,013,927	1
	Total	7,631,547	68	981,769	47	11,600	113	8,624,916	66
Veneer and plywood	Truck	1,050,184	37	371,287	71	--	--	1,421,471	46
	Rail	1,264,055	148	17,468	180	--	--	1,281,523	148
	Barge	85,400	62	--	--	--	--	85,400	62
	Onsite	227,404	1	47,717	1	--	--	275,121	1
	Total	2,627,043	88	436,472	68	--	--	3,063,515	85
All types	Truck	5,086,376	37	1,019,106	68	4,800	73	6,110,282	42
	Rail	3,589,581	147	47,757	140	6,800	142	3,644,138	147
	Barge	644,963	59	--	--	--	--	644,963	59
	Onsite	937,670	1	351,378	1	--	--	1,289,048	1
	Total	10,258,590	73	1,418,241	54	11,600	113	11,688,431	71

^{1/} Consists of residues reported as going directly from lumber mills and veneer and plywood mills to export; not included are volumes of residues exported by pulp and board mills.

Table 6.—Flows of residues to pulp and board mills by State of origin, type of shipping mill, carrier, and State of destination, 1968

(Also next page)

State of origin and type of shipping mill	Carrier	State of destination							
		Washington		Oregon		California		Total, all States	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Washington:									
Lumber	Truck	785,935	18	21,839	195	--	--	807,774	23
	Rail	470,950	131	29,325	239	--	--	500,275	138
	Barge	228,534	63	20,800	143	--	--	249,334	69
	Onsite	161,928	1	--	--	--	--	161,928	1
	Total	1,647,347	55	71,964	198	--	--	1,719,311	61
Veneer and plywood	Truck	174,326	26	--	--	--	--	174,326	26
	Rail	130,521	86	27,000	463	--	--	157,521	151
	Barge	41,400	59	--	--	--	--	41,400	59
	Onsite	45,736	1	--	--	--	--	45,736	1
	Total	391,983	46	27,000	463	--	--	418,983	73
All types	Truck	960,261	20	21,839	1	--	--	982,100	24
	Rail	601,471	122	56,325	346	--	--	657,796	141
	Barge	269,934	62	20,800	143	--	--	290,734	68
	Onsite	207,664	1	--	--	--	--	207,664	1
	Total	2,039,330	53	98,964	270	--	--	2,138,294	63
Oregon:									
Lumber	Truck	392,688	51	1,636,856	34	35,280	31	2,064,824	37
	Rail	556,691	195	769,429	108	--	--	1,326,120	145
	Barge	154,167	59	156,062	40	--	--	310,229	49
	Onsite	--	--	350,493	1	--	--	350,493	1
	Total	1,103,546	125	2,912,840	50	35,280	31	4,051,666	70
Veneer and plywood	Truck	79,651	98	651,901	28	--	--	731,552	36
	Rail	360,921	146	660,083	144	14,208	316	1,035,212	147
	Barge	5,600	46	8,800	9	29,600	1	44,000	65
	Onsite	--	--	114,853	1	--	--	114,853	1
	Total	446,172	136	1,435,637	79	43,808	160	1,925,617	94
All types	Truck	472,339	59	2,288,757	32	35,280	31	2,796,376	37
	Rail	917,612	176	1,429,512	125	14,208	316	2,361,332	146
	Barge	159,767	58	164,862	38	29,600	86	354,229	51
	Onsite	--	--	465,346	1	--	--	465,346	1
	Total	1,549,718	128	4,348,477	59	79,088	103	5,977,283	78

Table 6.—Flows of residues to pulp and board mills by State of origin, type of shipping mill, carrier, and State of destination, 1968—Continued

State of origin and type of shipping mill	Carrier	State of destination							
		Washington		Oregon		California		Total, all States	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
California:		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Lumber	Truck	--	--	--	--	1,163,594	47	1,163,594	47
	Rail	--	--	59,237	234	439,894	147	499,131	157
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	197,845	1	197,845	1
	Total	--	--	59,237	234	1,801,333	66	1,860,570	71
Veneer and plywood	Truck	--	--	3,285	141	141,021	56	144,306	58
	Rail	--	--	20,733	249	50,589	117	71,322	155
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	66,815	1	66,815	1
	Total	--	--	24,018	235	258,425	53	282,443	69
All types	Truck	--	--	3,285	141	1,304,615	48	1,307,900	48
	Rail	--	--	79,970	238	490,483	144	570,453	157
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	264,660	1	264,660	1
	Total	--	--	83,255	234	2,059,758	65	2,143,013	71
Total, west coast:									
Lumber	Truck	1,178,623	29	1,658,695	36	1,198,874	46	4,036,192	37
	Rail	1,027,641	166	857,991	121	439,894	147	2,325,526	146
	Barge	382,701	61	176,862	52	--	--	559,563	58
	Onsite	161,928	1	350,493	1	197,845	1	710,266	1
	Total	2,750,893	83	3,044,041	57	1,836,613	65	7,631,547	68
Veneer and plywood	Truck	253,977	48	655,186	28	141,021	56	1,050,184	37
	Rail	491,442	130	707,816	159	64,797	160	1,264,055	148
	Barge	47,000	57	8,800	9	29,600	86	85,400	62
	Onsite	45,736	1	114,853	1	66,815	1	227,404	1
	Total	838,155	94	1,486,655	88	302,233	69	2,627,043	88
All types	Truck	1,432,600	33	2,313,881	34	1,339,895	47	5,086,376	37
	Rail	1,519,083	154	1,565,807	139	504,691	149	3,589,581	147
	Barge	429,701	60	185,662	50	29,600	86	644,963	59
	Onsite	207,664	1	465,346	1	264,660	1	937,670	1
	Total	3,589,048	86	4,530,696	67	2,138,846	66	10,258,590	73

Table 7.—Flows of residues to pulp and board mills by area
(Continued through page 27)

Area of origin and type of shipping mill	Carrier	Area of destination							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Northwest Washington:									
Lumber	Truck	457,799	5	2,200	99	--	--	--	--
	Rail	145,647	49	2,000	109	--	--	--	--
	Barge	175,934	64	--	--	--	--	--	--
	Onsite	8,143	1	--	--	--	--	--	--
	Total	787,523	26	4,200	104	--	--	--	--
Veneer and plywood	Truck	68,956	2	--	--	--	--	--	--
	Rail	25,944	47	6,102	93	--	--	--	--
	Barge	28,800	46	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	123,700	21	6,102	93	--	--	--	--
All types	Truck	526,755	5	2,200	99	--	--	--	--
	Rail	171,591	48	8,102	97	--	--	--	--
	Barge	204,734	61	--	--	--	--	--	--
	Onsite	8,143	1	--	--	--	--	--	--
	Total	911,223	26	10,302	97	--	--	--	--
Lower Columbia:									
Lumber	Truck	32,677	46	1,010,010	35	89,931	45	21,440	199
	Rail	8,333	152	217,334	76	13,863	4	7,517	214
	Barge	--	--	343,374	62	--	--	--	--
	Onsite	--	--	188,777	1	--	--	--	--
	Total	41,010	68	1,759,495	42	103,794	44	28,957	203
Veneer and plywood	Truck	33,624	73	230,005	41	45,576	33	--	--
	Rail	--	--	150,253	65	3,648	23	--	--
	Barge	--	--	27,000	54	--	--	--	--
	Onsite	--	--	45,736	1	--	--	--	--
	Total	33,624	73	452,994	46	49,224	32	--	--
All types	Truck	66,301	60	1,240,015	36	135,507	41	21,440	199
	Rail	8,333	152	367,587	72	17,511	35	7,517	214
	Barge	--	--	370,374	62	--	--	--	--
	Onsite	--	--	234,513	1	--	--	--	--
	Total	74,634	70	2,212,489	42	153,018	40	28,957	203
West Central Oregon:									
Lumber	Truck	--	--	148,197	73	495,541	15	52,553	41
	Rail	--	--	194,562	151	181,060	29	77,040	42
	Barge	--	--	--	--	22,255	4	--	--
	Onsite	--	--	--	--	141,574	1	--	--
	Total	--	--	342,759	118	840,430	15	129,593	42
Veneer and plywood	Truck	--	--	33,880	155	242,611	21	--	--
	Rail	--	--	217,352	139	163,257	68	11,085	63
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	77,097	1	--	--
	Total	--	--	251,232	141	482,965	33	11,085	63
All types	Truck	--	--	182,077	88	738,152	17	52,553	41
	Rail	--	--	411,914	145	344,317	48	88,125	44
	Barge	--	--	--	--	22,255	4	--	--
	Onsite	--	--	--	--	218,671	1	--	--
	Total	--	--	593,991	128	1,323,395	22	140,678	44

of origin, type of shipping mill, carrier, and area of destination, 1968

destination

Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
--	--	--	--	--	--	--	--	459,999	6
--	--	--	--	--	--	--	--	147,647	49
--	--	--	--	--	--	--	--	175,934	64
--	--	--	--	--	--	--	--	8,143	1
--	--	--	--	--	--	--	--	791,723	26
--	--	--	--	--	--	--	--	68,956	2
--	--	--	--	--	--	--	--	32,046	56
--	--	--	--	--	--	--	--	28,800	46
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	129,802	25
--	--	--	--	--	--	--	--	528,955	5
--	--	--	--	--	--	--	--	179,693	50
--	--	--	--	--	--	--	--	204,734	61
--	--	--	--	--	--	--	--	8,143	1
--	--	--	--	--	--	--	--	921,525	26
--	--	--	--	--	--	--	--	1,154,058	38
--	--	--	--	--	--	--	--	247,047	80
--	--	--	--	--	--	--	--	343,374	62
--	--	--	--	--	--	--	--	188,777	1
--	--	--	--	--	--	--	--	1,933,256	44
--	--	--	--	--	--	--	--	309,205	43
--	--	--	--	--	--	--	--	153,901	64
--	--	--	--	--	--	--	--	27,000	53
--	--	--	--	--	--	--	--	45,736	1
--	--	--	--	--	--	--	--	535,842	46
--	--	--	--	--	--	--	--	1,463,263	39
--	--	--	--	--	--	--	--	400,948	74
--	--	--	--	--	--	--	--	370,374	61
--	--	--	--	--	--	--	--	234,513	1
--	--	--	--	--	--	--	--	2,469,098	45
--	--	--	--	--	--	--	--	696,291	28
--	--	--	--	--	--	--	--	452,662	84
--	--	--	--	--	--	--	--	22,255	4
--	--	--	--	--	--	--	--	141,574	1
--	--	--	--	--	--	--	--	1,312,782	44
--	--	--	--	--	--	--	--	276,491	37
--	--	--	--	--	--	--	--	391,694	107
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	77,097	1
--	--	--	--	--	--	--	--	745,282	70
--	--	--	--	--	--	--	--	972,782	31
--	--	--	--	--	--	--	--	844,356	94
--	--	--	--	--	--	--	--	22,255	4
--	--	--	--	--	--	--	--	218,671	1
--	--	--	--	--	--	--	--	2,058,064	53

Table 7.—Flows of residues to pulp and board mills by area

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Southwest Oregon:									
Lumber	Truck	--	--	--	--	39,412	130	319,931	21
	Rail	--	--	94,878	224	122,894	168	8,882	54
	Barge	--	--	--	--	--	--	18,000	2
	Onsite	--	--	--	--	--	--	127,327	1
	Total	--	--	94,878	224	162,306	159	474,140	16
Veneer and plywood	Truck	--	--	--	--	7,008	71	207,160	22
	Rail	--	--	99,756	233	297,565	163	43,200	236
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	37,756	1
	Total	--	--	99,756	233	304,573	161	288,116	52
All types	Truck	--	--	--	--	46,420	121	527,091	22
	Rail	--	--	194,634	228	420,459	164	52,082	205
	Barge	--	--	--	--	--	--	18,000	2
	Onsite	--	--	--	--	--	--	165,083	1
	Total	--	--	194,634	228	466,879	160	762,256	29
Coastal California:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	3,285	141
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	3,285	141
All types	Truck	--	--	--	--	--	--	3,285	141
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	3,285	141
Eastern Washington:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	59,391	148	80,638	307	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	59,391	148	80,638	307	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	24,300	156	30,550	430	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	24,300	156	30,550	430	--	--	--	--
All types	Truck	--	--	--	--	--	--	--	--
	Rail	83,691	150	111,188	341	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	83,691	150	111,188	341	--	--	--	--

of origin, type of shipping mill, carrier, and area of destination, 1968-Continued

destination									
Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
35,280	31	--	--	--	--	--	--	394,623	32
--	--	--	--	--	--	--	--	226,654	187
--	--	--	--	--	--	--	--	18,000	2
--	--	--	--	--	--	--	--	127,327	1
35,280	31	--	--	--	--	--	--	766,604	72
--	--	--	--	--	--	--	--	214,168	24
--	--	--	--	--	--	14,208	1	454,729	190
29,600	86	--	--	--	--	--	--	29,600	86
--	--	--	--	--	--	--	--	37,756	1
29,600	86	--	--	--	--	14,208	1	736,253	128
35,280	31	--	--	--	--	--	--	608,791	29
--	--	--	--	--	--	14,208	1	681,383	189
29,600	86	--	--	--	--	--	--	47,600	54
--	--	--	--	--	--	--	--	165,083	1
64,880	56	--	--	--	--	14,208	1	1,502,857	99
903,315	43	--	--	--	--	--	--	903,315	43
61,969	82	--	--	--	--	--	--	61,969	81
--	--	--	--	--	--	--	--	--	--
59,381	1	--	--	--	--	--	--	59,381	1
1,024,665	43	--	--	--	--	--	--	1,024,665	43
119,921	50	--	--	--	--	--	--	123,206	52
4,640	59	--	--	--	--	--	--	4,640	59
--	--	--	--	--	--	--	--	--	--
22,800	1	--	--	--	--	--	--	22,800	1
147,361	43	--	--	--	--	--	--	150,646	45
1,023,236	44	--	--	--	--	--	--	1,026,521	44
66,609	80	--	--	--	--	--	--	66,609	79
--	--	--	--	--	--	--	--	--	--
82,181	1	--	--	--	--	--	--	82,181	1
1,172,026	43	--	--	--	--	--	--	1,175,311	43
--	--	32,663	125	21,839	195	--	--	54,502	153
--	--	140,689	157	--	--	--	--	280,718	198
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	173,352	151	21,839	195	--	--	335,220	191
--	--	--	--	--	--	--	--	--	--
--	--	12,000	222	--	--	--	--	66,850	293
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	12,000	222	--	--	--	--	66,850	293
--	--	32,663	125	21,839	195	--	--	54,502	153
--	--	152,689	162	--	--	--	--	347,568	216
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	185,352	155	21,839	195	--	--	402,070	208

Table 7.—Flows of residues to pulp and board mills by area

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Eastern Oregon:									
Lumber	Truck	--	--	23,200	110	--	--	11,340	81
	Rail	13,020	405	235,990	236	82,781	173	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	13,020	405	259,190	224	82,781	173	11,340	81
Veneer and plywood	Truck	--	--	9,696	110	1,710	242	--	--
	Rail	--	--	23,199	253	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	32,895	211	1,710	242	--	--
All types	Truck	--	--	32,896	110	1,710	242	11,340	81
	Rail	13,020	405	259,189	237	82,781	173	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	13,020	405	292,085	223	84,491	174	11,340	81
Interior California:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	1,250	353	3,730	319	54,257	226
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	1,250	353	3,730	319	54,257	226
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	2,131	319	18,602	242
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	2,131	319	18,602	242
All types	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	1,250	353	5,861	319	72,859	230
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	1,250	353	5,861	319	72,859	230
Total, west coast:									
Lumber	Truck	490,476	9	1,183,607	41	624,884	26	405,264	35
	Rail	226,391	98	826,652	179	404,328	104	147,696	119
	Barge	175,934	64	343,374	62	22,255	4	18,000	2
	Onsite	8,143	1	188,777	1	141,574	1	127,327	1
	Total	900,944	42	2,542,410	86	1,193,041	49	698,287	46
Veneer and plywood	Truck	102,580	25	273,581	57	296,905	25	210,445	24
	Rail	50,244	100	527,212	157	466,601	129	72,887	211
	Barge	28,800	46	27,000	54	--	--	--	--
	Onsite	--	--	45,736	1	77,097	1	37,756	1
	Total	181,624	49	873,529	115	840,603	81	321,088	64
All types	Truck	593,056	11	1,457,188	44	921,789	26	615,709	31
	Rail	276,635	99	1,353,864	171	870,929	118	220,583	150
	Barge	204,734	61	370,374	62	22,255	4	18,000	2
	Onsite	8,143	1	234,513	1	218,671	1	165,083	1
	Total	1,082,568	43	3,415,939	93	2,033,644	62	1,019,375	52

of origin, type of shipping mill, carrier, and area of destination, 1968-Continued

destination

Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
--	--	14,400	105	64,185	32	--	--	113,125	62
--	--	132,302	170	7,574	16	--	--	471,667	207
--	--	--	--	--	--	--	--	--	--
--	--	--	--	46,600	1	--	--	46,600	1
--	--	146,702	163	118,359	18	--	--	631,392	166
--	--	2,564	170	23,088	1	--	--	37,058	52
--	--	70,314	154	--	--	--	--	93,513	179
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	72,878	155	23,088	1	--	--	130,571	143
--	--	16,964	115	87,273	23	--	--	150,183	59
--	--	202,616	164	7,574	16	--	--	565,180	202
--	--	--	--	--	--	--	--	--	--
--	--	--	--	46,600	1	--	--	46,600	1
--	--	219,580	160	141,447	15	--	--	761,963	162
112,504	99	--	--	--	--	147,775	31	260,279	59
357,659	162	--	--	--	--	20,266	80	437,162	168
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	138,464	1	138,464	1
470,163	147	--	--	--	--	306,505	21	835,905	107
19,000	99	--	--	--	--	2,100	1	21,100	89
45,016	124	--	--	--	--	933	59	66,682	162
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	44,015	1	44,015	1
64,016	117	--	--	--	--	47,048	2	131,797	96
131,504	99	--	--	--	--	149,875	30	281,379	62
402,675	158	--	--	--	--	21,199	79	503,844	167
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	182,479	1	182,479	1
534,179	144	--	--	--	--	353,553	18	967,702	105
1,051,099	49	47,063	119	86,024	73	147,775	31	4,036,192	37
419,628	151	272,991	163	7,574	16	20,266	80	2,325,526	146
--	--	--	--	--	--	--	--	559,563	58
59,381	1	--	--	46,600	1	138,464	1	710,266	1
1,530,108	75	320,054	156	140,198	46	306,505	21	7,631,547	68
138,921	57	2,564	170	23,088	1	2,100	1	1,050,184	37
49,656	118	82,314	164	--	--	15,141	300	1,264,055	148
29,600	1	--	--	--	--	--	--	85,400	62
22,800	1	--	--	--	--	44,015	1	227,404	1
240,977	68	84,878	164	23,088	1	61,256	75	2,627,043	88
1,190,020	50	49,627	121	109,112	58	149,875	30	5,086,376	37
469,284	147	355,305	163	7,574	16	35,407	175	3,589,581	147
29,600	86	--	--	--	--	--	--	644,963	59
82,181	1	--	--	46,600	1	182,479	1	937,670	1
1,771,085	74	404,932	158	163,286	40	367,761	30	10,258,590	73

Table 8.—Flows of residues to pulpmills by area of origin.

(Continued through page 33)

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average/ distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Northwest Washington:									
Lumber	Truck	445,585	5	2,200	99	--	--	--	--
	Rail	145,647	48	2,000	109	--	--	--	--
	Barge	175,934	64	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	767,166	27	4,200	104	--	--	--	--
Veneer and plywood	Truck	68,956	2	--	--	--	--	--	--
	Rail	25,944	47	6,102	93	--	--	--	--
	Barge	28,800	46	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	123,700	21	6,102	93	--	--	--	--
All types	Truck	514,541	4	2,200	99	--	--	--	--
	Rail	171,591	48	8,102	97	--	--	--	--
	Barge	204,734	61	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	890,866	26	10,302	97	--	--	--	--
Lower Columbia:									
Lumber	Truck	32,677	46	942,469	34	19,110	52	--	--
	Rail	8,333	152	217,334	76	4,743	66	--	--
	Barge	--	--	336,374	61	--	--	--	--
	Onsite	--	--	188,777	1	--	--	--	--
	Total	41,010	68	1,684,954	41	23,853	55	--	--
Veneer and plywood	Truck	33,624	73	207,431	44	37,200	35	--	--
	Rail	--	--	117,628	72	3,648	23	--	--
	Barge	--	--	14,400	23	--	--	--	--
	Onsite	--	--	45,736	1	--	--	--	--
	Total	33,624	73	385,195	47	40,848	34	--	--
All types	Truck	66,301	60	1,149,900	36	56,310	41	--	--
	Rail	8,333	152	334,962	75	8,391	47	--	--
	Barge	--	--	350,774	60	--	--	--	--
	Onsite	--	--	234,513	1	--	--	--	--
	Total	74,634	70	2,070,149	42	64,701	42	--	--
West Central Oregon:									
Lumber	Truck	--	--	140,517	74	324,589	11	37,374	35
	Rail	--	--	194,562	151	145,898	31	77,040	42
	Barge	--	--	--	--	22,255	4	--	--
	Onsite	--	--	--	--	116,285	1	--	--
	Total	--	--	335,079	119	609,027	14	114,414	40
Veneer and plywood	Truck	--	--	33,880	155	240,091	20	--	--
	Rail	--	--	217,352	139	158,457	68	11,085	63
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	62,487	1	--	--
	Total	--	--	251,232	141	461,035	34	11,085	63
All types	Truck	--	--	174,397	89	564,680	15	37,374	35
	Rail	--	--	411,914	145	304,355	50	88,125	44
	Barge	--	--	--	--	22,255	4	--	--
	Onsite	--	--	--	--	178,772	1	--	--
	Total	--	--	586,311	128	1,070,062	22	125,499	42

type of shipping mill, carrier, and area of destination, 1968

destination

Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
--	--	--	--	--	--	--	--	447,785	5
--	--	--	--	--	--	--	--	147,647	49
--	--	--	--	--	--	--	--	175,934	64
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	771,366	27
--	--	--	--	--	--	--	--	68,956	2
--	--	--	--	--	--	--	--	32,046	56
--	--	--	--	--	--	--	--	28,800	46
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	129,802	25
--	--	--	--	--	--	--	--	516,741	5
--	--	--	--	--	--	--	--	179,693	50
--	--	--	--	--	--	--	--	204,734	61
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	901,168	27
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	994,256	35
--	--	--	--	--	--	--	--	230,410	78
--	--	--	--	--	--	--	--	336,374	61
--	--	--	--	--	--	--	--	188,777	1
--	--	--	--	--	--	--	--	1,749,817	42
--	--	--	--	--	--	--	--	278,255	47
--	--	--	--	--	--	--	--	121,276	71
--	--	--	--	--	--	--	--	14,400	23
--	--	--	--	--	--	--	--	45,736	1
--	--	--	--	--	--	--	--	459,667	48
--	--	--	--	--	--	--	--	1,272,511	38
--	--	--	--	--	--	--	--	351,686	76
--	--	--	--	--	--	--	--	350,774	60
--	--	--	--	--	--	--	--	234,513	1
--	--	--	--	--	--	--	--	2,209,484	43
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	502,480	30
--	--	--	--	--	--	--	--	417,500	89
--	--	--	--	--	--	--	--	22,255	4
--	--	--	--	--	--	--	--	116,285	1
--	--	--	--	--	--	--	--	1,058,520	50
--	--	--	--	--	--	--	--	273,971	37
--	--	--	--	--	--	--	--	386,894	108
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	62,487	1
--	--	--	--	--	--	--	--	723,352	72
--	--	--	--	--	--	--	--	776,451	33
--	--	--	--	--	--	--	--	804,394	98
--	--	--	--	--	--	--	--	22,255	4
--	--	--	--	--	--	--	--	178,772	1
--	--	--	--	--	--	--	--	1,781,872	59

Table 8.—Flows of residues to pulpmills by area of origin, type of

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Southwest Oregon:									
Lumber	Truck	--	--	--	--	39,412	130	96,322	27
	Rail	--	--	94,878	224	122,894	168	6,204	57
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	73,754	1
	Total	--	--	94,878	224	162,306	159	176,280	17
Veneer and plywood	Truck	--	--	--	--	7,008	71	--	--
	Rail	--	--	99,756	233	297,565	163	43,200	236
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	37,756	1
	Total	--	--	99,756	233	304,573	161	80,956	126
All types	Truck	--	--	--	--	46,420	121	96,322	27
	Rail	--	--	194,634	228	420,459	164	49,404	213
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	111,510	1
	Total	--	--	194,634	228	466,879	160	257,236	51
Coastal California:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
All types	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Eastern Washington:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	59,391	148	80,638	307	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	59,391	148	80,638	307	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	24,300	156	30,550	430	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	24,300	156	30,550	430	--	--	--	--
All types	Truck	--	--	--	--	--	--	--	--
	Rail	83,691	150	111,188	341	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	83,691	150	111,188	341	--	--	--	--

shipping mill, carrier, and area of destination, 1968-Continued

destination									
Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
--	--	--	--	--	--	--	--	135,734	57
--	--	--	--	--	--	--	--	223,976	189
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	73,754	1
--	--	--	--	--	--	--	--	433,464	115
--	--	--	--	--	--	--	--	7,008	71
--	--	--	--	--	--	--	--	440,521	186
29,600	86	--	--	--	--	--	--	29,600	86
--	--	--	--	--	--	--	--	37,756	1
29,600	86	--	--	--	--	--	--	514,885	165
--	--	--	--	--	--	--	--	142,742	58
--	--	--	--	--	--	--	--	664,497	187
29,600	86	--	--	--	--	--	--	29,600	86
--	--	--	--	--	--	--	--	111,510	1
29,600	86	--	--	--	--	--	--	948,349	142
694,653	47	--	--	--	--	--	--	694,653	47
24,536	115	--	--	--	--	--	--	24,536	115
--	--	--	--	--	--	--	--	--	--
59,381	1	--	--	--	--	--	--	59,381	1
778,570	46	--	--	--	--	--	--	778,570	46
119,921	50	--	--	--	--	--	--	119,921	50
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
22,800	1	--	--	--	--	--	--	22,800	1
142,721	42	--	--	--	--	--	--	142,721	42
814,574	48	--	--	--	--	--	--	814,574	48
24,536	115	--	--	--	--	--	--	24,536	115
--	--	--	--	--	--	--	--	--	--
82,181	1	--	--	--	--	--	--	82,181	1
921,291	45	--	--	--	--	--	--	921,291	45
--	--	32,663	125	--	--	--	--	32,663	125
--	--	140,689	157	--	--	--	--	280,718	198
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	173,352	151	--	--	--	--	313,381	190
--	--	--	--	--	--	--	--	--	--
--	--	12,000	222	--	--	--	--	66,850	293
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	12,000	222	--	--	--	--	66,850	293
--	--	32,663	125	--	--	--	--	32,663	125
--	--	152,689	162	--	--	--	--	347,568	216
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	185,352	155	--	--	--	--	380,231	208

Table 8.—Flows of residues to pulpmills by area of origin, type of

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Eastern Oregon:									
Lumber	Truck	--	--	23,200	110	--	--	--	--
	Rail	13,020	405	235,990	236	82,781	173	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	13,020	405	259,190	224	82,781	173	--	--
Veneer and plywood	Truck	--	--	9,696	110	1,710	242	--	--
	Rail	--	--	23,199	253	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	32,895	211	1,710	242	--	--
All types	Truck	--	--	32,896	110	1,710	242	--	--
	Rail	13,020	405	259,189	237	82,781	173	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	13,020	405	292,085	223	84,491	174	--	--
Interior California:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	1,250	353	3,730	319	54,257	226
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	1,250	353	3,730	319	54,257	226
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	2,131	319	18,602	242
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	2,131	319	18,602	242
All types	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	1,250	353	5,861	319	72,859	230
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	1,250	353	5,861	319	72,859	230
Total, west coast:									
Lumber	Truck	478,262	8	1,108,386	41	383,111	25	133,696	29
	Rail	226,391	98	826,652	179	360,046	114	137,501	115
	Barge	175,934	64	336,374	61	22,255	4	--	--
	Onsite	--	--	188,777	1	116,285	1	73,754	1
	Total	880,587	42	2,460,189	87	881,697	58	344,951	57
Veneer and plywood	Truck	102,580	25	251,007	62	286,009	25	--	--
	Rail	50,244	100	494,587	165	461,801	130	72,887	211
	Barge	28,800	46	14,400	23	--	--	--	--
	Onsite	--	--	45,736	1	62,487	1	37,756	1
	Total	181,624	49	805,730	121	810,297	83	110,643	139
All types	Truck	580,842	11	1,359,393	45	669,120	25	133,696	29
	Rail	276,635	99	1,321,239	174	821,847	123	210,388	148
	Barge	204,734	61	350,774	60	22,255	4	--	--
	Onsite	--	--	234,513	1	178,772	1	111,510	1
	Total	1,062,211	43	3,265,919	95	1,691,994	70	455,594	77

Shipping mill, carrier, and area of destination, 1968-Continued

Destination									
Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
--	--	14,400	105	--	--	--	--	37,600	108
--	--	132,302	170	--	--	--	--	464,093	210
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	146,702	163	--	--	--	--	501,693	203
--	--	2,564	170	--	--	--	--	13,970	137
--	--	70,314	154	--	--	--	--	93,513	179
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	72,878	155	--	--	--	--	107,483	173
--	--	16,964	115	--	--	--	--	51,570	116
--	--	202,616	164	--	--	--	--	557,606	205
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	219,580	160	--	--	--	--	609,176	197
94,365	97	--	--	--	--	95,748	45	190,113	71
357,659	162	--	--	--	--	20,266	80	437,162	168
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	48,600	1	48,600	1
452,024	149	--	--	--	--	164,614	36	675,875	129
19,000	99	--	--	--	--	2,100	1	21,100	89
45,016	124	--	--	--	--	933	59	66,682	162
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
64,016	117	--	--	--	--	3,033	18	87,782	145
113,365	97	--	--	--	--	97,848	44	211,213	73
402,675	158	--	--	--	--	21,199	79	503,844	167
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	48,600	1	48,600	1
516,040	145	--	--	--	--	167,647	36	763,657	131
789,018	53	47,063	119	--	--	95,748	45	3,035,284	38
382,195	159	272,991	163	--	--	20,266	80	2,226,042	150
--	--	--	--	--	--	--	--	534,563	60
59,381	1	--	--	--	--	48,600	1	486,797	1
230,594	84	320,054	156	--	--	164,614	36	6,282,686	77
138,921	57	2,564	170	--	--	2,100	1	783,181	43
45,016	124	82,314	164	--	--	933	59	1,207,782	150
29,600	86	--	--	--	--	--	--	72,800	58
22,800	1	--	--	--	--	--	--	168,779	1
236,337	68	84,878	164	--	--	3,033	18	2,232,542	98
927,939	54	49,627	121	--	--	97,848	44	3,818,465	39
427,211	156	355,305	163	--	--	21,199	79	3,433,824	150
29,600	86	--	--	--	--	--	--	607,363	59
82,181	1	--	--	--	--	48,600	1	655,576	1
466,931	81	404,932	158	--	--	167,647	36	8,515,228	82

Table 9—Flows of residues to board mills by area of origin.

(Continued through page 39)

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Northwest Washington:									
Lumber	Truck	12,214	1	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	8,143	1	--	--	--	--	--	--
	Total	20,357	1	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
All types	Truck	12,214	1	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	8,143	1	--	--	--	--	--	--
	Total	20,357	1	--	--	--	--	--	--
Lower Columbia:									
Lumber	Truck	--	--	67,541	36	70,821	42	21,440	199
	Rail	--	--	--	--	9,120	23	7,517	214
	Barge	--	--	7,000	88	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	74,541	41	79,941	40	28,957	203
Veneer and plywood	Truck	--	--	22,574	1	8,376	21	--	--
	Rail	--	--	32,625	38	--	--	--	--
	Barge	--	--	12,600	88	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	67,799	34	8,376	21	--	--
All types	Truck	--	--	90,115	27	79,197	40	21,440	199
	Rail	--	--	32,625	38	9,120	23	7,517	214
	Barge	--	--	19,600	88	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	142,340	38	88,317	38	28,957	203
West Central Oregon:									
Lumber	Truck	--	--	7,680	49	170,952	20	15,179	56
	Rail	--	--	--	--	35,162	21	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	25,289	1	--	--
	Total	--	--	7,680	49	231,403	18	15,179	56
Veneer and plywood	Truck	--	--	--	--	2,520	28	--	--
	Rail	--	--	--	--	4,800	45	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	14,610	1	--	--
	Total	--	--	--	--	21,930	13	--	--
All types	Truck	--	--	7,680	49	173,472	20	15,179	56
	Rail	--	--	--	--	39,962	23	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	39,899	1	--	--
	Total	--	--	7,680	49	253,333	17	15,179	56

type of shipping mill, carrier, and area of destination, 1968

destination

Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
--	--	--	--	--	--	--	--	12,214	1
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	8,143	1
--	--	--	--	--	--	--	--	20,357	1
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	12,214	1
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	8,143	1
--	--	--	--	--	--	--	--	20,357	1
--	--	--	--	--	--	--	--	159,802	61
--	--	--	--	--	--	--	--	16,637	109
--	--	--	--	--	--	--	--	7,000	88
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	183,439	66
--	--	--	--	--	--	--	--	30,950	6
--	--	--	--	--	--	--	--	32,625	38
--	--	--	--	--	--	--	--	12,600	88
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	76,175	33
--	--	--	--	--	--	--	--	190,752	52
--	--	--	--	--	--	--	--	49,262	62
--	--	--	--	--	--	--	--	19,600	88
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	259,614	56
--	--	--	--	--	--	--	--	193,811	24
--	--	--	--	--	--	--	--	35,162	21
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	25,289	1
--	--	--	--	--	--	--	--	254,262	21
--	--	--	--	--	--	--	--	2,520	28
--	--	--	--	--	--	--	--	4,800	45
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	14,610	1
--	--	--	--	--	--	--	--	21,930	13
--	--	--	--	--	--	--	--	196,331	24
--	--	--	--	--	--	--	--	39,962	23
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	39,899	1
--	--	--	--	--	--	--	--	276,192	20

Table 9—Flows of residues to board mills by area of origin, type of

(Continued through page 39)

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Southwest Oregon:									
Lumber	Truck	--	--	--	--	--	--	223,609	18
	Rail	--	--	--	--	--	--	2,678	48
	Barge	--	--	--	--	--	--	18,000	2
	Onsite	--	--	--	--	--	--	53,573	1
	Total	--	--	--	--	--	--	297,860	14
Veneer and plywood	Truck	--	--	--	--	--	--	207,160	22
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	207,160	22
All types	Truck	--	--	--	--	--	--	430,769	20
	Rail	--	--	--	--	--	--	2,678	48
	Barge	--	--	--	--	--	--	18,000	2
	Onsite	--	--	--	--	--	--	53,573	1
	Total	--	--	--	--	--	--	505,020	17
Coastal California:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	3,285	141
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	3,285	141
All types	Truck	--	--	--	--	--	--	3,285	141
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	3,285	141
Eastern Washington:									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
All types	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--

Shipping mill, carrier, and area of destination, 1968-Continued

destination

Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
35,280	31	--	--	--	--	--	--	258,889	20
--	--	--	--	--	--	--	--	2,678	48
--	--	--	--	--	--	--	--	18,000	2
--	--	--	--	--	--	--	--	53,573	1
35,280	31	--	--	--	--	--	--	333,140	16
--	--	--	--	--	--	--	--	207,160	22
--	--	--	--	--	--	14,208	316	14,208	316
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	14,208	316	221,368	41
35,280	31	--	--	--	--	--	--	466,049	21
--	--	--	--	--	--	14,208	316	16,886	273
--	--	--	--	--	--	--	--	18,000	2
--	--	--	--	--	--	--	--	53,573	1
35,280	31	--	--	--	--	14,208	316	554,508	26
208,662	29	--	--	--	--	--	--	208,662	29
37,433	59	--	--	--	--	--	--	37,433	59
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
246,095	33	--	--	--	--	--	--	246,095	33
--	--	--	--	--	--	--	--	3,285	141
4,640	59	--	--	--	--	--	--	4,640	59
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
4,640	59	--	--	--	--	--	--	7,925	92
208,662	29	--	--	--	--	--	--	211,947	31
42,073	59	--	--	--	--	--	--	42,073	59
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
250,735	34	--	--	--	--	--	--	254,020	35
--	--	--	--	21,839	195	--	--	21,839	195
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	21,839	195	--	--	21,839	195
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	21,839	195	--	--	21,839	195
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	21,839	195	--	--	21,839	195

Table 9.—Flows of residues to board mills by area of origin, type of

Area of origin and type of shipping mill	Carrier	Area of							
		Northwest Washington		Lower Columbia		West Central Oregon		Southwest Oregon	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Eastern Oregon :									
Lumber	Truck	--	--	--	--	--	--	11,340	81
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	11,340	81
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
All types	Truck	--	--	--	--	--	--	11,340	81
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	11,340	81
Interior California :									
Lumber	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Veneer and plywood	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
All types	Truck	--	--	--	--	--	--	--	--
	Rail	--	--	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--
	Total	--	--	--	--	--	--	--	--
Total, west coast:									
Lumber	Truck	12,214	1	75,221	37	241,773	26	271,568	37
	Rail	--	--	--	--	44,282	21	10,195	170
	Barge	--	--	7,000	88	--	--	18,000	2
	Onsite	8,143	1	--	--	25,289	1	53,573	1
	Total	20,357	1	82,221	41	311,344	23	353,336	33
Veneer and plywood	Truck	--	--	22,574	1	10,896	22	210,445	24
	Rail	--	--	32,625	38	4,800	45	--	--
	Barge	--	--	12,600	88	--	--	--	--
	Onsite	--	--	--	--	14,610	1	--	--
	Total	--	--	67,799	34	30,306	15	210,445	24
All types	Truck	12,214	1	97,795	29	252,669	26	482,013	31
	Rail	--	--	32,625	38	49,082	23	10,195	170
	Barge	--	--	19,600	88	--	--	18,000	2
	Onsite	8,143	1	--	--	39,899	1	53,573	1
	Total	20,357	1	150,020	38	341,650	23	563,781	30

Shipping mill, carrier, and area of destination, 1968-Continued

Destination									
Coastal California		Eastern Washington		Eastern Oregon		Interior California		Total, all areas	
Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
--	--	--	--	64,185	32	--	--	75,525	39
--	--	--	--	7,574	16	--	--	7,574	16
--	--	--	--	--	--	--	--	--	--
--	--	--	--	46,600	1	--	--	46,600	1
--	--	--	--	118,359	18	--	--	129,699	24
--	--	--	--	23,088	1	--	--	23,088	1
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	23,088	1	--	--	23,088	1
--	--	--	--	87,273	23	--	--	98,613	30
--	--	--	--	7,574	16	--	--	7,574	16
--	--	--	--	--	--	--	--	--	--
--	--	--	--	46,600	1	--	--	46,600	1
--	--	--	--	141,447	15	--	--	152,787	20
18,139	104	--	--	--	--	52,027	3	70,166	29
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	89,864	1	89,864	1
18,139	104	--	--	--	--	141,891	1	160,030	13
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	44,015	1	44,015	1
--	--	--	--	--	--	44,015	1	44,015	1
18,139	104	--	--	--	--	52,027	3	70,166	29
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	133,879	1	133,879	1
18,139	104	--	--	--	--	185,906	1	204,045	10
262,081	34	--	--	86,024	73	52,027	3	1,000,908	35
37,433	59	--	--	7,574	16	--	--	99,484	50
--	--	--	--	--	--	--	--	25,000	26
--	--	--	--	46,600	1	89,864	1	223,469	1
299,514	37	--	--	140,198	46	141,891	1	1,348,861	30
--	--	--	--	23,088	1	--	--	267,003	20
4,640	59	--	--	--	--	14,208	316	56,273	110
--	--	--	--	--	--	--	--	12,600	88
--	--	--	--	--	--	44,015	1	58,625	1
4,640	59	--	--	23,088	1	58,223	77	394,501	32
262,081	34	--	--	109,112	58	52,027	3	1,267,911	31
42,073	59	--	--	7,574	16	14,208	316	155,757	72
--	--	--	--	--	--	--	--	37,600	46
--	--	--	--	46,600	1	133,879	1	282,094	1
304,154	38	--	--	163,286	40	200,114	23	1,743,362	30

Table 10.—Amount and average distance of shipment of residues to pulp and board mills by area of origin, type of shipping mill, carrier, and ownership of pulp and board mills, 1968

(Continued through page 43)

Area of origin and type of shipping mill	Carrier	Ownership of pulpmill						Ownership of board mill					
		Same as shipping mill		Different from shipping mill		Total, all types		Same as shipping mill		Different from shipping mill		Total, all types	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Northwest Washington:													
Lumber	Truck	222,975	1	224,810	10	447,785	5	12,214	1	--	--	12,214	1
	Rail	100,628	39	47,019	71	147,647	49	--	--	--	--	--	--
	Barge	--	--	175,934	64	175,934	64	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	8,143	1	--	--	8,143	1
	Total	323,603	12	447,763	38	771,366	27	20,357	1	--	--	20,357	1
Veneer and plywood	Truck	--	--	68,956	2	68,956	2	--	--	--	--	--	--
	Rail	22,444	46	9,602	81	32,046	56	--	--	--	--	--	--
	Barge	10,800	55	18,000	41	28,800	46	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	--	--	--	--
	Total	33,244	49	96,558	17	129,802	25	--	--	--	--	--	--
All types	Truck	222,975	1	293,766	8	516,741	5	12,214	1	--	--	12,214	1
	Rail	123,072	40	56,621	72	179,693	50	--	--	--	--	--	--
	Barge	10,800	55	193,934	62	204,734	61	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	8,143	1	--	--	8,143	1
	Total	356,847	16	544,321	34	901,168	27	20,357	1	--	--	20,357	1
Lower Columbia:													
Lumber	Truck	63,428	21	930,828	36	994,256	35	6,480	38	153,322	61	159,802	61
	Rail	93,043	85	137,367	74	230,410	78	--	--	16,637	109	16,637	109
	Barge	60,000	37	276,374	66	336,374	61	--	--	7,000	88	7,000	88
	Onsite	153,785	1	34,992	1	188,777	1	--	--	--	--	--	--
	Total	370,256	31	1,379,561	45	1,749,817	42	6,480	38	176,959	67	183,439	66
Veneer and plywood	Truck	--	--	278,255	47	278,255	47	22,574	1	8,376	21	30,950	6
	Rail	3,648	23	117,628	72	121,276	71	32,625	38	--	--	32,625	38
	Barge	2,400	43	12,000	19	14,400	23	--	--	12,600	88	12,600	88
	Onsite	45,736	1	--	--	45,736	1	--	--	--	--	--	--
	Total	51,784	4	407,883	53	459,667	48	55,199	22	20,976	61	76,175	33
All types	Truck	63,428	21	1,209,083	38	1,272,511	38	29,054	9	161,698	59	190,752	52
	Rail	96,691	83	254,995	73	351,686	76	32,625	38	16,637	109	49,262	62
	Barge	62,400	37	288,374	64	350,774	60	--	--	19,600	88	19,600	88
	Onsite	199,521	1	34,992	1	234,513	1	--	--	--	--	--	--
	Total	422,040	28	1,787,444	47	2,209,484	43	61,679	24	197,935	66	259,614	56

West Central Oregon:

Lumber	Truck	--	--	502,480	30	502,480	30	--	--	193,811	24	193,811	24
	Rail	29,362	61	388,138	91	417,500	89	25,600	19	9,562	26	35,162	21
	Barge	--	--	22,255	4	22,255	4	--	--	--	--	--	--
	Onsite	116,285	1	--	--	116,285	1	25,289	1	--	--	25,289	1
	Total	145,647	13	912,873	56	1,058,520	50	50,889	10	203,373	24	254,262	21
Veneer and plywood	Truck	79,123	13	194,848	46	273,971	37	--	--	2,520	28	2,520	28
	Rail	81,536	70	305,358	118	386,894	108	--	--	4,800	45	4,800	45
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	62,487	1	--	--	62,487	1	14,610	1	--	--	14,610	1
	Total	223,146	30	500,206	90	723,352	72	14,610	1	7,320	39	21,930	13
All types	Truck	79,123	13	697,328	35	776,451	33	--	--	196,331	24	196,331	24
	Rail	110,898	68	693,496	103	804,394	98	25,600	19	14,362	32	39,962	23
	Barge	--	--	22,255	4	22,255	4	--	--	--	--	--	--
	Onsite	178,772	1	--	--	178,772	1	39,899	1	--	--	39,899	1
	Total	368,793	23	1,413,079	68	1,781,872	59	65,499	8	210,693	24	276,192	20

Southwest Oregon:

Lumber	Truck	--	--	135,734	57	135,734	57	--	--	258,889	20	258,889	20
	Rail	--	--	223,976	189	223,976	189	--	--	2,678	48	2,678	48
	Barge	--	--	--	--	--	--	--	--	18,000	2	18,000	2
	Onsite	73,754	1	--	--	73,754	1	--	--	53,573	1	53,573	1
	Total	73,754	1	359,710	139	433,464	115	--	--	333,140	16	333,140	16
Veneer and plywood	Truck	--	--	7,008	71	7,008	71	182,248	23	24,912	17	207,160	22
	Rail	47,112	212	393,409	183	440,521	186	14,208	316	--	--	14,208	316
	Barge	--	--	29,600	86	29,600	86	--	--	--	--	--	--
	Onsite	37,756	1	--	--	37,756	1	--	--	--	--	--	--
	Total	84,868	118	430,017	174	514,885	165	196,456	44	24,912	17	221,368	41
All types	Truck	--	--	142,742	58	142,742	58	182,248	23	283,801	19	466,049	21
	Rail	47,112	212	617,385	185	664,497	187	14,208	316	2,678	48	16,886	273
	Barge	--	--	29,600	86	29,600	86	--	--	18,000	2	18,000	2
	Onsite	111,510	1	--	--	111,510	1	--	--	53,573	1	53,573	1
	Total	158,622	63	789,727	158	948,349	142	196,456	44	358,052	16	554,508	26

Coastal California:

Lumber	Truck	115,642	58	579,011	45	694,653	47	29,600	6	179,062	33	208,662	29
	Rail	--	--	24,536	115	24,536	115	--	--	37,433	59	37,433	59
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	59,381	1	--	--	59,381	1	--	--	--	--	--	--
	Total	175,023	38	603,547	48	778,570	46	29,600	6	216,495	37	246,095	33
Veneer and plywood	Truck	28,116	22	91,805	59	119,921	50	3,285	141	--	--	3,285	141
	Rail	--	--	--	--	--	--	--	--	4,640	59	4,640	59
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	22,800	1	--	--	22,800	1	--	--	--	--	--	--
	Total	50,916	12	91,805	59	142,721	42	3,285	141	4,640	59	7,925	92
All types	Truck	143,758	51	670,816	47	814,574	48	32,885	19	179,062	33	211,947	31
	Rail	--	--	24,536	115	24,536	115	--	--	42,073	59	42,073	59
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	82,181	1	--	--	82,181	1	--	--	--	--	--	--
	Total	225,939	33	695,352	49	921,291	45	32,885	19	221,135	38	254,020	35

Table 10.—Amount and average distance of shipment of residues to pulp and board mills by area of origin, type of shipping mill, carrier, and ownership of pulp and board mills, 1968—Continued

Area of origin and type of shipping mill	Carrier	Ownership of pulpmill						Ownership of board mill					
		Same as shipping mill		Different from shipping mill		Total, all types		Same as shipping mill		Different from shipping mill		Total, all types	
		Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance	Amount	Average distance
		Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles	Tons	Miles
Eastern Washington:													
Lumber	Truck	--	--	32,663	125	32,663	125	21,839	195	--	--	21,839	195
	Rail	85,890	141	194,828	223	280,718	198	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	--	--	--	--
	Total	85,890	141	227,491	209	313,381	190	21,839	195	--	--	21,839	195
Veneer and plywood	Truck	--	--	--	--	--	--	--	--	--	--	--	--
	Rail	30,550	430	36,300	177	66,850	293	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	--	--	--	--
	Total	30,550	430	36,300	177	66,850	293	--	--	--	--	--	--
All types	Truck	--	--	32,663	125	32,663	125	21,839	195	--	--	21,839	195
	Rail	116,440	217	231,128	216	347,568	216	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	--	--	--	--
	Total	116,440	217	263,791	205	380,231	208	21,839	195	--	--	21,839	195
Eastern Oregon:													
Lumber	Truck	--	--	37,600	108	37,600	108	--	--	75,525	39	75,525	39
	Rail	109,193	151	354,900	229	464,093	210	7,574	16	--	--	7,574	16
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	46,600	1	46,600	1
	Total	109,193	151	392,500	217	501,693	203	7,574	16	122,125	24	129,699	24
Veneer and plywood	Truck	--	--	13,970	137	13,970	137	--	--	23,088	1	23,088	1
	Rail	32,000	85	61,513	228	93,513	179	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	--	--	--	--
	Total	32,000	85	75,483	211	107,483	173	--	--	23,088	1	23,088	1
All types	Truck	--	--	51,570	116	51,570	116	--	--	98,613	30	98,613	30
	Rail	141,193	136	416,413	228	557,606	205	7,574	16	--	--	7,574	16
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	--	--	46,600	1	46,600	1
	Total	141,193	136	467,983	216	609,176	197	7,574	16	145,213	21	152,787	20

Lumber	Truck	17,906	47	172,207	73	190,113	71	40,638	1	29,528	68	70,166	29
	Rail	74,238	192	362,924	163	437,162	168	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	48,600	1	--	--	48,600	1	89,864	1	--	--	89,864	1
	Total	140,744	107	535,131	134	675,875	129	130,502	1	29,528	68	160,030	13
Veneer and plywood	Truck	2,100	1	19,000	99	21,100	89	--	--	--	--	--	--
	Rail	40,958	205	25,724	94	66,682	162	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	--	--	--	--	--	--	44,015	1	--	--	44,015	1
	Total	43,058	195	44,724	96	87,782	145	44,015	1	--	--	44,015	1
All types	Truck	20,006	42	191,207	76	211,213	73	40,638	1	29,528	68	70,166	29
	Rail	115,196	197	388,648	159	503,844	167	--	--	--	--	--	--
	Barge	--	--	--	--	--	--	--	--	--	--	--	--
	Onsite	48,600	1	--	--	48,600	1	133,879	1	--	--	133,879	1
	Total	183,802	128	579,855	131	763,657	131	174,517	1	29,528	68	204,045	10
Total, west coast :													
Lumber	Truck	419,951	21	2,615,333	40	3,035,284	38	110,771	42	890,137	34	1,000,908	35
	Rail	492,354	115	1,733,688	160	2,226,042	150	33,174	18	66,310	66	99,484	50
	Barge	60,000	37	474,563	62	534,563	60	--	--	25,000	26	25,000	26
	Onsite	451,805	1	34,992	1	486,797	1	123,296	1	100,173	1	223,469	1
	Total	1,424,110	48	4,858,576	85	6,282,686	77	267,241	20	1,081,620	32	1,348,861	30
Veneer and plywood	Truck	109,339	15	673,842	47	783,181	43	208,107	22	58,896	12	267,003	20
	Rail	258,248	159	949,534	147	1,207,782	150	46,833	122	9,440	51	56,273	110
	Barge	13,200	53	59,600	59	72,800	58	--	--	12,600	88	12,600	88
	Onsite	168,779	1	--	--	168,779	1	58,625	1	--	--	58,625	1
	Total	549,566	79	1,682,976	104	2,232,542	98	313,565	33	80,936	28	394,501	32
All types	Truck	529,290	20	3,289,175	42	3,818,465	39	318,878	29	949,033	32	1,267,911	31
	Rail	750,602	130	2,683,222	156	3,433,824	150	80,007	79	75,750	64	155,757	72
	Barge	73,200	40	534,163	62	607,363	59	--	--	37,600	46	37,600	46
	Onsite	620,584	1	34,992	1	655,576	1	181,921	1	100,173	1	282,094	1
	Total	1,973,676	56	6,541,552	90	8,515,228	82	580,806	27	1,162,556	32	1,743,362	30

Table 11.—Amount and average distance of shipment of residues from sawmills to pulp and board mills by area of origin, sawmill-size class, and carrier, 1968

(Continued through page 48)

Area of origin and sawmill-size class ^{1/}	Carrier	To pulpmills		To board mills	
		Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Northwest Washington:					
D	Truck	28,175	42	--	--
	Rail	2,000	109	--	--
	Barge	5,488	27	--	--
	Onsite	--	--	--	--
	Total	35,663	44	--	--
C	Truck	54,923	5	--	--
	Rail	17,603	48	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	72,526	15	--	--
B	Truck	70,590	9	--	--
	Rail	10,916	141	--	--
	Barge	59,200	53	--	--
	Onsite	--	--	--	--
	Total	140,706	38	--	--
A	Truck	294,097	1	12,214	1
	Rail	117,128	39	--	--
	Barge	111,246	71	--	--
	Onsite	--	--	8,143	1
	Total	522,471	25	20,357	1
All size classes	Truck	447,785	5	12,214	1
	Rail	147,647	49	--	--
	Barge	175,934	64	--	--
	Onsite	--	--	8,143	1
	Total	771,366	27	20,357	1
Lower Columbia:					
D	Truck	93,077	30	6,000	81
	Rail	--	--	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	93,077	30	6,000	81
C	Truck	172,148	43	24,006	79
	Rail	72,811	93	--	--
	Barge	19,080	66	--	--
	Onsite	--	--	--	--
	Total	264,039	58	24,006	79
B	Truck	251,544	44	25,978	31
	Rail	10,200	67	--	--
	Barge	175,458	79	--	--
	Onsite	--	--	--	--
	Total	437,202	59	25,978	31
A	Truck	477,487	28	103,818	62
	Rail	147,399	72	16,637	109
	Barge	141,836	38	7,000	88
	Onsite	188,777	1	--	--
	Total	955,499	31	127,455	70
All size classes	Truck	994,256	35	159,802	61
	Rail	230,410	78	16,637	109
	Barge	336,374	61	7,000	88
	Onsite	188,777	1	--	--
	Total	1,749,817	42	183,439	66

^{1/} See footnote at end of table.

Table 11.—Amount and average distance of shipment of residues from sawmills to pulp and board mills by area of origin, sawmill-size class, and carrier, 1968—Continued

Area of origin and sawmill-size class ^{1/}	Carrier	To pulpmills		To board mills	
		Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
West Central Oregon:					
D	Truck	33,602	56	3,936	7
	Rail	5,757	148	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	39,359	70	3,936	7
C	Truck	199,463	23	56,013	22
	Rail	28,376	87	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	227,839	31	56,013	22
B	Truck	122,372	30	91,223	22
	Rail	179,126	73	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	301,498	55	91,223	22
A	Truck	147,043	35	42,639	30
	Rail	204,241	102	35,162	21
	Barge	22,255	4	--	--
	Onsite	116,285	1	25,289	1
	Total	489,824	53	103,090	19
All size classes	Truck	502,480	30	193,811	24
	Rail	417,500	89	35,162	21
	Barge	22,255	4	--	--
	Onsite	116,285	1	25,289	1
	Total	1,058,520	50	254,262	21
Southwest Oregon:					
D	Truck	3,864	26	--	--
	Rail	--	--	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	3,864	26	--	--
C	Truck	--	--	52,464	11
	Rail	18,444	137	2,678	48
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	18,444	137	55,142	13
B	Truck	94,592	56	84,687	13
	Rail	106,700	189	--	--
	Barge	--	--	--	--
	Onsite	30,629	1	--	--
	Total	231,921	110	84,687	13
A	Truck	37,278	63	121,738	28
	Rail	98,832	198	--	--
	Barge	--	--	18,000	2
	Onsite	43,125	1	53,573	1
	Total	179,235	122	193,311	18
All size classes	Truck	135,734	57	258,889	20
	Rail	223,976	189	2,678	48
	Barge	--	--	18,000	2
	Onsite	73,754	1	53,573	1
	Total	433,464	115	333,140	16

^{1/} See footnote at end of table.

Table 11.—Amount and average distance of shipment of residues from sawmills to pulp and board mills by area of origin, sawmill-size class, and carrier, 1968—Continued

Area of origin and sawmill-size class ^{1/}	Carrier	To pulpmills		To board mills	
		Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Coastal California:					
D	Truck	--	--	3,600	77
	Rail	--	--	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	--	--	3,600	77
C	Truck	95,318	74	33,759	15
	Rail	--	--	--	--
	Barge	--	--	--	--
	Onsite	11,170	1	--	--
	Total	106,488	66	33,759	15
B	Truck	341,435	40	88,235	34
	Rail	20,209	100	12,992	59
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	361,644	43	101,227	37
A	Truck	257,900	47	83,068	28
	Rail	4,327	190	24,441	59
	Barge	--	--	--	--
	Onsite	48,211	1	--	--
	Total	310,438	42	107,509	35
All size classes	Truck	694,653	47	208,662	29
	Rail	24,536	115	37,433	59
	Barge	--	--	--	--
	Onsite	59,381	1	--	--
	Total	778,570	46	246,095	33
Eastern Washington:					
D	Truck	2,955	146	--	--
	Rail	6,030	299	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	8,985	248	--	--
C	Truck	13,196	241	--	--
	Rail	99,122	276	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	112,318	272	--	--
B	Truck	16,512	28	--	--
	Rail	72,444	173	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	88,956	146	--	--
A	Truck	--	--	21,839	195
	Rail	103,122	135	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	103,122	135	21,839	195
All size classes	Truck	32,663	125	21,839	195
	Rail	280,718	198	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	313,381	190	21,839	195

^{1/} See footnote at end of table.

Table 11.—Amount and average distance of shipment of residues from sawmills to pulp and board mills by area of origin, sawmill-size class, and carrier, 1968—Continued

Area of origin and sawmill-size class ^{1/}	Carrier	To pulpmills		To board mills	
		Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Eastern Oregon:					
D	Truck	--	--	--	--
	Rail	3,024	256	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	3,024	256	--	--
C	Truck	14,400	105	60,325	32
	Rail	146,929	213	7,574	16
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	161,329	204	67,899	31
B	Truck	23,200	110	15,200	66
	Rail	51,733	178	--	--
	Barge	--	--	--	--
	Onsite	--	--	22,600	1
	Total	74,933	157	37,800	27
A	Truck	--	--	--	--
	Rail	262,407	214	--	--
	Barge	--	--	--	--
	Onsite	--	--	24,000	1
	Total	262,407	214	24,000	1
All size classes	Truck	37,600	108	75,525	39
	Rail	464,093	210	7,574	16
	Barge	--	--	--	--
	Onsite	--	--	46,600	1
	Total	501,693	203	129,699	24
Interior California:					
D	Truck	5,000	141	--	--
	Rail	--	--	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	5,000	141	--	--
C	Truck	20,654	27	40,638	1
	Rail	89,495	135	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	110,149	114	40,638	1
B	Truck	128,346	68	24,568	72
	Rail	226,128	164	--	--
	Barge	--	--	--	--
	Onsite	--	--	--	--
	Total	354,474	129	24,568	72
A	Truck	36,113	95	4,960	47
	Rail	121,539	201	--	--
	Barge	--	--	--	--
	Onsite	48,600	1	89,864	1
	Total	206,252	135	94,824	3
All size classes	Truck	190,113	71	70,166	29
	Rail	437,162	168	--	--
	Barge	--	--	--	--
	Onsite	48,600	1	89,864	1
	Total	675,875	129	160,030	13

^{1/} See footnote at end of table.

Table 11.—Amount and average distance of shipment of residues from sawmills to pulp and board mills by area of origin, sawmill-size class, and carrier, 1968—Continued

Area of origin and sawmill-size class ^{1/}	Carrier	To pulpmills		To board mills	
		Amount	Average distance	Amount	Average distance
		<i>Tons</i>	<i>Miles</i>	<i>Tons</i>	<i>Miles</i>
Total, west coast:					
D	Truck	166,673	43	13,536	59
	Rail	16,811	217	--	--
	Barge	5,488	27	--	--
	Onsite	--	--	--	--
	Total	188,972	58	13,536	59
C	Truck	570,102	43	267,205	23
	Rail	472,780	176	10,252	24
	Barge	19,080	66	--	--
	Onsite	11,170	1	--	--
	Total	1,073,132	102	277,457	23
B	Truck	1,048,591	44	329,891	29
	Rail	677,456	142	12,992	59
	Barge	234,658	73	--	--
	Onsite	30,629	1	22,600	1
	Total	1,991,334	80	365,483	29
A	Truck	1,249,918	29	390,276	46
	Rail	1,058,995	143	76,240	52
	Barge	275,337	49	25,000	26
	Onsite	444,998	1	200,869	1
	Total	3,029,248	66	692,385	33
All size classes	Truck	3,035,284	38	1,000,908	35
	Rail	2,226,042	150	99,484	50
	Barge	534,563	60	25,000	26
	Onsite	486,797	1	223,469	1
	Total	6,282,686	77	1,348,861	30

^{1/} Mill-size classes identified as follows: Class A mills = 120,000+ board-foot capacity per 8-hour shift; B = 80,000-119,000; C = 40,000-79,000; D = less than 40,000.

Table 12.—Wood residues unused or used for fuel by type of residue, area, and industry, 1968

(Tons)

Area and industry	Type of residue			
	Coarse ^{1/}	Medium ^{2/}	Fine ^{3/}	Total
Northwest Washington:				
Lumber	108,571	241,758	423,084	773,413
Veneer and plywood	263,728	--	24,936	288,664
Total	372,299	241,758	448,020	1,062,077
Lower Columbia:				
Lumber	240,134	287,196	474,534	1,001,864
Veneer and plywood	188,961	--	25,056	214,017
Total	429,095	287,196	499,590	1,215,881
West Central Oregon:				
Lumber	89,057	249,746	420,948	759,751
Veneer and plywood	417,964	--	46,190	464,154
Total	507,021	249,746	467,138	1,223,905
Southwest Oregon:				
Lumber	189,509	86,594	487,358	763,461
Veneer and plywood	318,084	--	53,121	371,205
Total	507,593	86,594	540,479	1,134,666
Coastal California:				
Lumber	484,605	172,170	502,033	1,158,808
Veneer and plywood	118,872	--	11,082	129,954
Total	603,477	172,170	513,115	1,288,762
Eastern Washington:				
Lumber	103,632	120,244	189,661	413,537
Veneer and plywood	11,500	--	2,760	14,260
Total	115,132	120,244	192,421	427,797
Eastern Oregon:				
Lumber	245,903	128,533	423,982	798,418
Veneer and plywood	46,318	--	3,265	49,583
Total	292,221	128,533	427,247	848,001
Interior California:				
Lumber	746,226	406,257	821,095	1,973,578
Veneer and plywood	80,367	--	8,204	88,571
Total	826,593	406,257	829,299	2,062,149
Total, west coast:				
Lumber	2,207,637	1,692,498	3,742,695	7,642,830
Veneer and plywood	1,445,794	--	174,614	1,620,408
Total	3,653,431	1,692,498	3,917,309	^{4/} 9,263,238

^{1/} Coarse residue includes: (1) From sawmills--slabs, edgings, and sawmill and planer trim;
(2) from veneer mills--all wood residues except sawdust and sander dust.

^{2/} Medium residue comes only from sawmills and consists of planer shavings.

^{3/} Fine residue consists of sawdust and sander dust.

^{4/} 53 percent used for fuel, 47 percent unused.

Choate, Grover A.

1972. Flows of mill residues to pulp and board manufacturers, Washington, Oregon, and California, 1968. USDA Forest Service Resour. Bull. PNW-39, 49 p., illus. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

Of the 10 million tons of residues shipped from lumber and veneer and plywood mills to domestic pulp and board mills in 1968, half went by truck (average distance 37 miles). One-fourth of the shipments were between mills of the same ownership. Trucking was of greater importance for shipments from small sawmills than from large.

Keywords: Freight transportation, pulpmills, sawmills, manufacturing.

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The mission of the PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION is to provide the knowledge, technology, and alternatives for present and future protection, management, and use of forest, range, and related environments.

Within this overall mission, the Station conducts and stimulates research to facilitate and to accelerate progress toward the following goals:

1. Providing safe and efficient technology for inventory, protection, and use of resources.
2. Development and evaluation of alternative methods and levels of resource management.
3. Achievement of optimum sustained resource productivity consistent with maintaining a high quality forest environment.

The area of research encompasses Oregon, Washington, Alaska, and, in some cases, California, Hawaii, the Western States, and the Nation. Results of the research will be made available promptly. Project headquarters are at:

Fairbanks, Alaska	Portland, Oregon
Juneau, Alaska	Olympia, Washington
Bend, Oregon	Seattle, Washington
Corvallis, Oregon	Wenatchee, Washington
La Grande, Oregon	

The FOREST SERVICE of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.

