
UNITED STATES DEPARTMENT OF LABOR

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BUREAU OF LABOR STATISTICS

Isador Lubin, Commissioner (on leave)

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Earnings in Ship Construction Yards, Fall of 1942

Prepared in the
DIVISION OF WAGE ANALYSIS

Robert J. Myers, Chief



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LETTER OF TRANSMITTAL

UNITED STATES DEPARTMENT OF LABOR,
BUREAU OF LABOR STATISTICS,
Washington, D. C., August 19, 1943.

The SECRETARY OF LABOR:

I have the honor to transmit herewith a report on earnings in ship-construction yards in the fall of 1942. This report was prepared by Willis C. Quant under the direction of Victor S. Baril, in the Bureau's Division of Wage Analysis, Robert J. Myers, Chief.

A. F. HINRICHS, *Acting Commissioner.*

HON. FRANCES PERKINS,
Secretary of Labor.

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United States Bureau of Labor Statistics*

Reprinted without change from the MONTHLY LABOR REVIEW, August 1943]

Earnings in Ship-Construction Yards, Fall of 1942

Summary

THE level of earnings of shipbuilding workers, partly because of the nature of shipbuilding employment, is among the highest found in American industry. In November 1942, first-shift workers in private yards engaged wholly or primarily in new ship construction had average hourly earnings of \$1.044, exclusive of premium pay for overtime. Within the industry, the highest level of earnings, \$1.135, was found on the Pacific Coast, the next highest, \$1.048, on the Atlantic Coast, and the lowest, 90.7 cents on the Gulf Coast. The averages for the Great Lakes and Inland regions were but 2 cents apart, 99.4 and 97.4 cents, respectively.

Straight-time hourly earnings, on the basis of data from identical yards, increased by an average of 11 cents between the spring and fall of 1942. Most of this increase was due to the wage adjustments made in the four wage-stabilization agreements concluded at the National Shipbuilding Conference in May 1942. In addition to establishing a uniform minimum rate of \$1.20 for first-class skilled mechanics in all four regions, thereby eliminating the 5-cent differential formerly existing in the Gulf region, the conference also granted a general increase of 8 cents an hour to all other workers in the Atlantic, Great Lakes, and Pacific regions, together with increases in the Gulf Coast region ranging from 9 cents an hour for workers with rates up to 69.5 cents an hour to 13 cents an hour for workers with rates of \$1.07 an hour and over. These increases became effective between April 1 and August 1 in the various regions. The conference also deleted from the original zone agreements the provision for adjusting wages in accordance with changes in cost of living. Provision was also made for periodic wage reviews, the first of which was to be made about June 1, 1943. Similar reviews are to be made annually thereafter.

Increases in earnings in identical yards over and above those provided for in the stabilization agreements may be attributed largely to the upgrading of workers, and in part to the acceptance of the stabilization program by a greater number of yards.

A sharp increase of more than 16 cents in average hourly earnings between the spring and fall of 1942 in identical yards in the Inland region, which is not subject to the wage-stabilization program, was due largely to general advances in wage rates in this region to levels broadly comparable with those found in the stabilized areas.

Scope and Method of Survey

The present comprehensive study of shipbuilding wages represents the continuation of a series of such studies inaugurated by the Bureau of Labor Statistics in 1936.² The last detailed study of the industry was made during the spring of 1942, shortly before the National Shipbuilding Conference in May of that year, which resulted in broad wage adjustments in the industry. The present survey was made during the fall of 1942 and reflects, therefore, the wage changes provided for under the stabilization agreements which went into effect during the summer of 1942. This study was designed to provide basic data for the appraisal of these wage changes, and to serve the needs of governmental agencies charged with the responsibility of developing the shipbuilding program and stabilizing wages in the industry.

The current survey was limited to privately operated shipyards engaged wholly or primarily in the construction of new vessels of 5 gross tons and over. Yards engaged in the construction of smaller vessels, commonly referred to as boats, and ship-repair yards were excluded from the survey. Some construction yards also do repair work and boat building. Data relating to such activities, however, were excluded, whenever possible, from the scope of the present survey.

The wage data presented in this report are based on pay-roll information for the pay period ending nearest November 15, 1942. Full utilization was made of the pay-roll data submitted semiannually to the Secretary of Labor under the Copeland Act. These data were very carefully analyzed and, where necessary, supplemented by information obtained at the yards by experienced representatives of the Bureau. The field investigations were concerned very largely with the clarifying of occupational classifications and class designations within occupations, indicating first-shift workers, and, in the case of yards having incentive-wage systems, prorating incentive earnings so that these earnings could be reflected in the average straight-time hourly earnings of the workers covered in the survey.

Altogether 86 privately operated shipyards engaged wholly or primarily in the construction of new ships (5 gross tons and over) were surveyed. In the selection of these yards full consideration was given to such factors as type and size of yard, type of craft under construction, geographical location, and corporate affiliation. The sample is believed to be fully representative of private ship-construction yards.

The wage data presented in this report relate only to first (day) shift workers.³ The data for such workers reveal accurately the basic occupational and wage structure of the industry, since practically all occupations are fully represented on the first shift. Furthermore, data for first-shift workers are not distorted by shift differentials. Extra earnings from premium pay for overtime were also eliminated.

² Earnings and Hours in Private Shipyards, 1936 and 1937 (Serial No. R. 788); Earnings and Hours in United States Navy Yards, 1936 (Serial No. R. 809); Earnings and Hours in Private Shipyards and Navy Yards, 1936 and 1937 (Serial No. R. 845); and Hourly Earnings in Private Shipyards, 1942 (Bulletin No. 727). The results of the semiannual surveys made by the Bureau between May 1937 and May 1941 for the use of the United States Maritime Commission have not been published.

³ In a few instances, workers found in important occupations occurring only on the second or third shifts were included in the study. In such cases, however, extra earnings resulting from shift-differential payments were eliminated so that the figures presented for these workers are average straight-time hourly first- or day-shift earnings.

As a result, the average earnings presented in this report are straight-time hourly earnings exclusive of premium overtime and shift-differential earnings.

No attempt was made to cover all occupations found in the shipbuilding industry. Two basic factors were considered in selecting occupations for coverage: (1) The importance of an occupation in terms of number of workers employed, and (2) the strategic importance of an occupation in the occupational structure. The occupational coverage actually obtained is comprehensive in scope, as approximately 90 percent of all first-shift workers in the yards surveyed were employed in the 60 occupations for which data are presented in this report.

Definition of Regions

Shipyards must of necessity be situated either on the coast or along some navigable stream or body of water, because of launching and delivery requirements. The industry today is widely scattered along the three coasts, the Great Lakes, and the inland waterways of the country. Any analysis of wages in as widely scattered an industry as shipbuilding must necessarily be made on a regional rather than an industry-wide basis. For purposes of this study, the regions used are those of the shipbuilding wage-stabilization program, namely, the Atlantic, Gulf, and Pacific Coasts, and the Great Lakes. The remainder of the country, where shipyards do not come within the scope of the stabilization program, will be referred to as the "Inland" region.

The areas covered by the four regions, as defined under the stabilization program, are—

Atlantic Coast: The tidewater ports of the eastern part of the United States from the eastern tip of Maine to, but not including, the northern border of Florida; and also, specifically, the Hudson River inland, to and including the industrial area of Albany, New York, and the Delaware River inland, to and including the industrial areas of Philadelphia, Pa., and Camden, N. J.; the Chesapeake Bay; and the James River inland to and including Richmond, Va.

Gulf Coast: The tidewater ports of the eastern coast of Florida and of the Gulf of Mexico, bounded on the west by the Rio Grande, and also, specifically, the Mississippi River inland, to and including the industrial area of New Orleans, including Lake Pontchartrain; the Houston Ship Channel inland, to and including the industrial area of Houston; and the ship channels of the Neches and Sabine Rivers.

Pacific Coast: The tidewater ports of the western part of the United States from the Mexican border to the Canadian border, and also, specifically, the Sacramento River inland, to and including Sacramento, Calif.; the San Joaquin River, tributary to the Sacramento River, inland to and including Stockton, Calif.; the Columbia River inland, to and including the industrial areas of Portland, Oreg., and Vancouver, Wash.; and the Willamette River, tributary to the Columbia River, inland to and including the industrial area of Portland, Oreg.; and the Puget Sound area.

Great Lakes: The industrial areas of the American lake ports on Lake Superior, Lake Michigan, Lake Huron, Lake Erie, and Lake Ontario; and the connecting waters between the Great Lakes.

The fifth region, referred to in this report as the "Inland" region, includes yards situated primarily on the Ohio and Mississippi Rivers and their tributaries, excluding those in Southern Louisiana and Mississippi. These yards, as previously stated, are not covered by the wage-stabilization program.

Labor Force

The building of ships requires a high degree of skill. In many occupations the work is both arduous and hazardous. Although the labor force in a shipyard still consists mainly of male workers, as a result of the tremendous expansion of the industry and the serious manpower shortage, women have been hired in increasing numbers. They are now found in many capacities, even as welders, an occupation which until recently was limited to men. Even at the present time, however, women constitute only a small proportion of all shipyard workers. When performing the same work as men, they receive equal pay, and therefore no attempt was made in this report to present data separately for men and women.

Craftsmen account for over one-half of the labor force in all regions except the Gulf Coast. In the latter region, craftsmen represent only about two-fifths of all workers. Classes or gradations of workers are generally found within each craft, ranging from handymen up to first-class workers and specialists. In this report, specialists are combined with first-class workers. The number of classes below the first class varies with yards and regions. On the West Coast, only one broad group is found. Within this group or class, which is known as the "trainee" group, and which combines all of the classes below first class found in other regions, workers advance within a specified period of time (from 2 to 6 months) to first class. In other regions, workers start as handymen and advance successively through the third and second class up to the first class; the rate of advance varies widely, depending largely on the proficiency of the worker and openings in the higher classes.

The separate figures for first-class workers (including specialists) and other classes of craftsmen reveal rather wide variations by region. In the fall of 1942, the greatest proportion of first-class workers (48.2 percent) was found on the Pacific Coast, while the lowest (15.4 percent) was found in the Atlantic Coast yards (table 1). The Great Lakes region ranked third, 31.4 percent of all workers being designated as first class. The Gulf Coast and Inland regions each had about the same proportion of first-class workers, 23.6 and 23.3 percent, respectively. Because of wide variations between regions and even within regions in the number of classes of craftsmen below first class, it is not possible to refine this group in order to make regional comparisons. It may be noted, however, that the proportion of craftsmen other than first class in the total labor force varied from 10.6 percent on the Pacific Coast to 41.4 percent on the Atlantic Coast.

Craftsmen's helpers form a very substantial proportion of the workers in any shipyard. The proportion does not vary greatly among regions, ranging from a low of 17.6 percent in the Atlantic Coast yards to a high of 25.5 percent in the Great Lakes area.

The greatest proportion of apprentices and learners, 13.8 percent, was found in the Gulf Coast area. This compares with 8.1 percent on the Atlantic Coast, 5.8 percent on the Great Lakes, 2.8 percent in the Inland region, and 0.6 percent on the Pacific Coast.

Another important occupation from the standpoint of number of workers is that of laborers. The Gulf and Inland regions had a substantially higher proportion of such workers than the other three regions.

TABLE 1.—Percent of Day-Shift Workers in Ship-Construction Yards, by Class of Worker and Region, Spring and Fall of 1942

Class of worker	Atlantic Coast		Gulf Coast		Pacific Coast		Great Lakes		Inland	
	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942
Craftsmen, first class.....	15.4	15.2	23.6	24.6	48.2	52.1	31.4	27.1	23.3	20.9
Craftsmen, other classes.....	41.4	38.5	18.0	17.4	10.6	5.5	21.1	28.9	30.8	32.5
Helpers.....	17.6	16.3	21.0	24.0	20.4	22.7	25.5	23.0	17.7	16.7
Laborers.....	7.6	8.2	14.4	13.9	4.6	5.8	4.8	6.5	14.2	18.9
Apprentices and learners.....	8.1	10.8	13.8	12.7	.6	.4	5.8	3.7	2.8	3.4
Supervisors.....	5.9	5.3	5.5	4.2	11.6	7.3	7.0	4.7	7.5	3.1
Other workers.....	4.0	5.7	3.7	3.2	4.0	6.2	4.4	6.1	3.7	4.5
All workers studied.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The constitution of the labor force in private ship-construction yards does not appear to have changed materially between the spring and fall of 1942, as an examination of table 1 indicates. It should be mentioned, however, that the yard coverage in the fall survey was somewhat broader than that in the spring survey. This difference in coverage may tend to obscure some of the changes which actually did take place. On the basis of the data in table 1, the most outstanding change occurred in the Great Lakes region, where the number of craftsmen other than first class decreased from 28.9 percent in the spring to 21.1 percent in the fall of 1942. Part of this decline is accounted for by the increase in the proportion of first-class craftsmen from 27.1 to 31.4 percent. Other significant changes were a decline of about 4 percentage points in the proportion of first-class workers on the Pacific Coast and general increases in the relative number of supervisory workers (foremen, assistant foremen, quartermen, and leaders) in each of the five regions.

Wage-Stabilization Program

A wage-stabilization program in the shipbuilding industry was sponsored early in 1941 by the Shipbuilding Stabilization Committee of the National Defense Advisory Commission, to secure greater uniformity in rates of pay and to provide for a systematic and periodic review of general wage levels in the industry. Four agreements⁴ were voluntarily entered into by representatives of both the shipbuilders and the labor organizations and were approved by the Navy, the Maritime Commission, and the Office of Production Management. The agreements became effective on the following dates: West Coast, April 1; Great Lakes, June 2; Atlantic Coast, June 23; and Gulf Coast, August 1, 1941.

Under the 1941 wage-stabilization agreements, a minimum wage was set for "first-class skilled mechanics."⁵ This rate was set at \$1.12 in the Atlantic, Pacific, and Great Lakes regions and at \$1.07 in the Gulf Coast region. The determination of the occupations to be included in the "first-class skilled mechanic" group and the rates to be paid to other workers were left to local bargaining between management and labor. The agreements also made provision for the stand-

⁴ For further detail on these agreements, see *Monthly Labor Review*, issues of May 1941 (p.1162) and October 1941 (p. 830).

⁵ The Atlantic and Gulf Coasts and the Great Lakes agreements designated the workers entitled to the minimum rate as "first-class skilled mechanics," but in the Pacific Coast agreement, they were referred to as "skilled mechanics." In actual practice, however, the minimum in each of the regions has been applied to "first-class skilled mechanics" only.

ardization of shifts, overtime pay, shift differentials, prohibition against strikes and lockouts, and periodic wage adjustments based on increases in cost of living. The first wage adjustment was to take place at the end of the first year of the respective agreements.

The effective dates of the wage agreements, it will be recalled, varied from April 1 to August 1. Since living costs mounted rapidly and unevenly in the months following the effective dates of the agreements, there was danger that the wage structure of the industry would be upset if cost-of-living adjustments were made at different times for each region. Consequently, a National Shipbuilding Conference, composed of representatives of the War Production Board, the Navy Department, the Maritime Commission, labor, and management, was held in May 1942 to consider methods of adjusting wages in all four regions. This conference, acting on an appeal from the President, agreed to delete from the zone agreements the provision for adjusting wages in proportion to changes in the cost of living. Instead, specific wage increases, which were generally lower than the workers would have obtained by application of the cost-of-living formula, were agreed upon. The new minimum for "first-class skilled mechanics" was set at \$1.20 for each of the four regions, thus eliminating the differential that had existed for the Gulf Coast region under the terms of the first agreements. For other than first-class skilled mechanics, the amended agreements provided for an increase of 8 cents an hour except on the Gulf Coast where a sliding scale was effected. This scale provided for increases ranging from 9 cents an hour for workers with rates up to 69.5 cents to 13 cents an hour for workers with rates of \$1.07 and above. Parties to the conference agreed that all wage increases in each of the regions were to be paid in United States Savings Bonds. Methods of applying this provision were left to local bargaining between labor and management.

The new agreements further provided for elimination of double-time rates for Saturday and Sunday work as such, and prescribed instead for the payment of time and a half for the sixth consecutive day and double time for the seventh consecutive day in a worker's regularly established week. The agreements also provided for the payment of time and a half for all work on holidays recognized by local agreements and authorized the acceptance of extra pay in lieu of vacations.

The amended agreements became effective in each of the regions at the expiration of the first year of the original agreement and are to remain in effect for the duration of the war. Periodic wage reviews were provided for, with the first scheduled to be made about June 1, 1943. Annual reviews are to be made thereafter.

Hourly Earnings, Fall of 1942

The hourly straight-time earnings of shipbuilding workers on the first shift averaged \$1.044 in November 1942. The highest earnings in any of the five regions were found on the Pacific Coast, where the workers averaged \$1.135 an hour. Gulf Coast shipyards reported the lowest earnings, the average being 90.7 cents an hour. The averages in the remaining regions were \$1.048 in the Atlantic Coast area, 99.4 cents in the Great Lakes area, and 97.4 cents in the Inland area. These averages indicate the existence of substantially different wage or employment structures in the different areas.

TABLE 2.—Average Hourly Straight-Time Earnings of Day-Shift Ship-Construction Workers, by Region, Occupation, and Class, Spring and Fall of 1942

Occupation and class	Atlantic Coast		Gulf Coast		Pacific Coast		Great Lakes		Inland	
	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942
Average hourly straight-time earnings ¹										
All occupations studied.....	\$1.048	\$0.966	\$0.907	\$0.776	\$1.135	\$1.034	\$0.994	\$0.861	\$0.974	\$0.795
Anglesmiths.....	1.165	1.142	1.227	1.050	1.273	1.267	.954	.900	1.284	(?)
First class.....	1.428	1.296	1.334	1.050	1.331	1.267	(?)	(?)	(?)	(?)
Other classes.....	1.074	.952	1.065	-----	1.194	-----	.939	.875	(?)	(?)
Anglesmiths' helpers.....	.968	.724	.798	-----	1.080	1.000	(?)	.707	-----	-----
Apprentices.....	.824	.691	.815	.724	1.019	.717	.672	(?)	.795	.646
Blacksmiths.....	1.141	1.086	1.156	1.051	1.165	1.132	1.147	.969	.983	.960
First class.....	1.222	1.153	1.214	1.061	1.205	1.151	1.193	1.035	1.100	1.012
Other classes.....	1.073	1.034	.941	(?)	1.057	(?)	1.050	.902	.820	(?)
Blacksmiths' helpers.....	.880	.849	.751	.617	.967	.873	.871	.751	.660	.609
Boilermakers.....	1.124	1.047	1.093	.974	1.173	1.111	1.150	(?)	1.121	-----
First class.....	1.360	1.239	1.200	1.075	1.200	1.121	1.200	(?)	1.194	-----
Other classes.....	1.066	1.012	1.009	.862	1.070	1.037	(?)	(?)	.977	-----
Boilermakers' helpers.....	.929	.757	.706	.612	.950	.866	.835	-----	.928	-----
Bolters, hand ².....	.986	1.257	(?)	.950	.955	.872	.916	.741	-----	-----
First class.....	1.063	1.290	(?)	.950	.955	.872	.919	.780	-----	-----
Other classes.....	.918	1.208	(?)	-----	-----	-----	(?)	.730	-----	-----
Burners, acetylene (including gas).....	1.123	1.064	1.100	.978	1.179	1.116	1.093	.968	1.093	.854
First class.....	1.222	1.151	1.209	1.070	1.200	1.123	1.162	1.162	1.198	(?)
Other classes.....	1.077	1.012	1.010	.843	1.067	1.001	1.047	.829	1.004	.844
Burners' helpers, acetylene (including gas).....	.862	(?)	.702	(?)	.950	(?)	.797	(?)	.879	(?)
Carpenters (shipwrights).....	1.035	.968	1.135	.949	1.197	1.121	1.094	.983	1.074	.926
First class.....	1.142	1.100	1.196	1.063	1.203	1.128	1.186	1.085	1.162	1.004
Other classes.....	.963	.848	.959	.783	1.042	.941	.955	.863	.836	.817
Carpenters' helpers.....	.802	.731	.680	.615	.943	.870	.811	.711	.812	.702
Chippers and caulkers (including foundry chippers).....	1.219	1.218	1.124	.948	1.180	1.100	1.121	.975	1.116	.901
First class.....	1.396	1.360	1.200	1.070	1.204	1.123	1.180	1.061	1.186	.925
Other classes.....	1.132	1.176	1.032	.826	1.089	1.001	1.025	.792	1.013	.890
Coppersmiths.....	1.229	1.217	1.133	.980	1.195	1.091	1.183	(?)	(?)	-----
First class.....	1.488	1.422	1.203	(?)	1.200	1.167	1.183	(?)	(?)	-----
Other classes.....	1.085	1.047	.974	(?)	(?)	.922	(?)	(?)	-----	-----
Coppersmiths' helpers.....	.853	.766	.694	.624	.972	.870	-----	.778	(?)	-----
Crane operators (all types).....	1.154	1.056	1.177	1.068	1.286	1.191	1.116	1.000	1.161	.957
First class.....	1.193	1.137	1.185	1.068	1.290	1.191	1.177	.991	1.224	.925
Other classes.....	1.119	.942	1.034	-----	1.091	-----	1.058	1.010	1.090	.983
Draftsmen (senior and junior).....	1.382	1.323	1.163	.711	1.321	1.116	1.121	.933	1.301	1.360
Drillers (including reamers and countersinkers).....	1.249	1.111	1.067	(?)	1.079	1.000	.936	.810	-----	-----
First class.....	1.354	1.242	1.070	(?)	1.080	1.000	(?)	.850	-----	-----
Other classes.....	1.176	.922	(?)	-----	1.050	(?)	.932	.783	-----	-----
Electricians.....	1.107	1.047	1.154	1.012	1.191	1.133	1.126	.985	1.013	.913
First class.....	1.266	1.224	1.198	1.124	1.206	1.140	1.180	1.119	1.177	1.015
Other classes.....	1.064	.987	.933	.780	1.079	1.007	1.026	.912	.984	.876
Electricians' helpers.....	.853	.744	.682	.597	.955	.871	.796	.734	.819	.669
Erectors.....	1.024	1.011	1.081	-----	1.147	-----	.976	.810	.966	-----
First class.....	1.198	1.148	1.124	-----	1.206	-----	1.122	1.010	.931	-----
Other classes.....	.965	.961	.994	-----	1.116	-----	.942	.781	.996	-----
Erectors' helpers.....	.772	.684	.697	-----	.950	-----	.769	.645	-----	-----
Foremen (including assistant foremen and quartermen).....	1.640	1.503	1.428	1.234	1.537	1.421	1.372	1.282	1.363	1.176
Furnacemen (plate and forge shops).....	1.072	1.066	(?)	.943	(?)	1.232	(?)	.829	(?)	(?)
First class.....	1.348	1.133	(?)	1.150	(?)	1.232	(?)	.850	(?)	(?)
Other classes.....	1.023	1.039	-----	.685	-----	-----	(?)	(?)	-----	-----
Handymen, not elsewhere classified.....	.861	.813	-----	-----	-----	-----	-----	-----	.995	-----
Helpers, not elsewhere classified.....	.733	.740	.669	(?)	.941	.860	.718	.709	.786	.575
Joiners (including wood-working-machine operators).....	1.129	1.007	1.046	.933	1.200	1.123	1.124	1.033	-----	-----
First class.....	1.301	1.133	1.149	1.041	1.201	1.123	1.183	1.091	-----	-----
Other classes.....	1.032	.957	1.003	.805	(?)	(?)	1.014	.875	-----	-----
Joiners' helpers.....	.825	.725	.789	.550	.950	.836	.685	.670	-----	-----
Laborers (excluding tank cleaners and janitors).....	.718	.637	.611	.499	.880	.797	.707	.575	.743	.583

See footnotes at end of table.

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Earnings in Ship-Construction Yards

TABLE 2.—Average Hourly Straight-Time Earnings of Day-Shift Ship-Construction Workers, by Region, Occupation, and Class, Spring and Fall of 1942—Con.

Occupation and class	Atlantic Coast		Gulf Coast		Pacific Coast		Great Lakes		Inland	
	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942
Average hourly straight-time earnings ¹										
Layers-out.....	\$1.219	\$1.128	\$1.129	\$1.014	\$1.326	\$1.235	(?)	\$.930	\$1.138	\$0.984
First class.....	1.400	1.278	1.192	1.079	1.328	1.235	(?)	(?)	1.261	1.162
Other classes.....	1.125	.996	1.014	.866	(?)	(?)	(?)	(?)	.891	.895
Leaders.....	1.357	1.307	1.322	1.137	1.335	1.263	\$1.264	1.173	1.279	.993
Learners.....	.891	.790	.740	.500	.950		.906	.700	.697	.645
Loftsmen.....	1.218	1.200	1.153	1.079	1.313	1.229	1.120	.980	1.224	1.123
First class.....	1.402	1.348	1.406	1.253	1.325	1.254	1.197	1.052	1.303	1.175
Other classes.....	1.086	1.084	1.104	.978	1.090	1.049	.901	(?)	(?)	(?)
Machinists, shop and outside.....	1.138	1.060	1.123	.987	1.187	1.121	1.109	.968	1.052	.997
First class.....	1.291	1.235	1.200	1.056	1.203	1.128	1.175	1.089	1.186	1.073
Other classes.....	1.076	.987	.978	.859	1.081	1.014	1.032	.898	.992	.921
Machinists' helpers, shop and outside.....	.840	.733	.695	.620	.951	.868	.791	.719	.824	.601
Molders, foundry.....	1.308	1.136	1.200		(?)	1.145				
First class.....	1.555	1.265	1.200		(?)	1.145				
Other classes.....	1.145	1.048								
Painters, brush and spray.....	1.176	1.074	1.143	.837	1.119	1.123	1.070	.762	1.050	.816
First class.....	1.293	1.204	1.192	1.017	1.202	1.123	1.142	.984	1.128	.810
Other classes.....	1.085	1.012	.870	.674	1.025		.970	.657	.980	.819
Patternmakers.....	1.409	1.318	1.410	(?)	1.327	1.489	1.452	1.317		
First class.....	1.423	1.327	1.410	(?)	1.327	1.489	1.469	1.317		
Other classes.....	1.358	1.297		(?)			(?)			
Pipe fitters (including plumbers).....	1.062	1.050	1.112	.983	1.183	1.118	1.119	1.066	1.077	.939
First class.....	1.251	1.201	1.198	1.066	1.200	1.122	1.168	1.124	1.171	.989
Other classes.....	1.040	.999	.998	.868	1.082	.973	.980	.917	.999	.914
Pipe fitters' helpers (including plumbers' helpers).....	.864	.754	.702	.615	.949	.870	.798	.687	.807	.651
Plate-shop machine operators.....	1.108	1.044	1.077	.915	1.149	1.061	1.068	.885	1.110	.916
First class.....	1.363	1.160	1.177	1.056	1.206	1.118	(?)	.870	1.228	.858
Other classes.....	1.045	1.005	1.009	.788	1.094	.974	1.055	.900	1.035	.991
Plate-shop machine operators' helpers.....	.867	.754	.713	.634	.950	.877	.834	.640	.830	.612
Regulators.....	1.062	1.029		.950	1.130	1.053	(?)	.860		
First class.....	1.169	1.148		.950	1.130	1.053	(?)	.860		
Other classes.....	.973	.935								
Riggers, ship.....	1.138	1.049	1.119	.975	1.177	1.130	.947	.943		(?)
First class.....	1.224	1.161	1.195	1.067	1.200	1.130	1.016	.943		(?)
Other classes.....	1.099	1.002	1.011	.910	1.122		.830			(?)
Riggers, yard and crane.....	.901	.882	.736	.839	1.109	1.065	.967	.794	1.071	.750
First class.....	1.025	.978	1.080	.997	1.118	1.065	1.075	.796	1.081	.831
Other classes.....	.844	.858	.713	.798	1.074		.900	.788	1.037	.608
Rivet heaters.....	1.021	.973	.886	(?)	1.080	1.000	.941	.780		(?)
Rivet holders-on.....	1.244	1.196	.893	.660	1.050	1.006	1.061	.920		
Rivet passers.....	.833	.909	(?)		.963	.896	.764	.653		
Riveters.....	1.441	1.348	1.305	1.056	1.197	1.122	1.205	1.115		(?)
First class.....	1.768	1.498	1.317	1.070	1.211	1.122	1.227	1.115		(?)
Other classes.....	1.267	1.261	(?)	(?)	1.087					
Sheet-metal workers (including tinsmiths).....	1.146	1.077	1.121	.956	1.194	1.080	1.163	.914	1.022	1.016
First class.....	1.385	1.302	1.199	1.038	1.204	1.129	1.198	.935	1.225	(?)
Other classes.....	1.084	1.013	1.009	.850	1.075	.993	1.041	.893	.991	.963
Sheet-metal workers' helpers.....	.882	.779	.671	.620	.956	.872	.811	.690	.848	(?)
Ship fitters.....	1.100	1.015	1.079	.947	1.172	1.090	1.097	.945	1.028	.882
First class.....	1.255	1.169	1.203	1.061	1.203	1.121	1.177	1.110	1.189	1.042
Other classes.....	1.076	.988	1.008	.834	1.091	1.002	1.006	.838	.969	.834
Ship fitters' helpers.....	.848	.743	.682	.587	.960	.870	.799	.683	.742	.572
Stage builders.....	.987	.873			1.080	1.000	.856			
Tank cleaners.....	.673				.930	.850				(?)
Tool and die makers.....	1.181	1.105	(?)		(?)	1.174	(?)			
First class.....	1.371	1.255	(?)		(?)	1.195	(?)			
Other classes.....	1.010	1.030				(?)				
Tracers.....	.754	.691	.837	(?)	.902	.831	.759	.737	1.017	(?)
Watchmen and guards.....	.760	.660	.665	.507	.901	.808	.767	.561	.713	.613
Welders, acetylene and electric.....	1.231	1.149	1.108	.969	1.185	1.122	1.093	.983	1.072	.874
First class.....	1.516	1.426	1.260	1.061	1.200	1.127	1.184	1.088	1.174	1.038
Other classes.....	1.172	1.079	.988	.814	1.071	1.020	.889	.898	.987	.763
Welders' helpers, acetylene and electric.....	.827	.713	.748	.625	.967	.869	.777	.668	.782	(?)

See footnotes at end of table.

TABLE 2.—Average Hourly Straight-Time Earnings of Day-Shift Ship-Construction Workers, by Region, Occupation, and Class, Spring and Fall of 1942—Con.

Occupation and class	Atlantic Coast		Gulf Coast		Pacific Coast		Great Lakes		Inland	
	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942
	Percent of workers									
All occupations studied.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Anglesmiths.....	.2	.1	.1	.1	.2	(⁵)	.3	.3	.1	.2
First class.....	(⁵)	.1	.1	.1	.1	(⁵)	(⁵)	.1	.1	.1
Other classes.....	.2	(⁵)	(⁵)	-----	.1	-----	.3	.2	(⁵)	.1
Anglesmiths' helpers.....	.2	.1	.2	-----	.2	.1	(⁵)	.3	-----	-----
Apprentices.....	1.4	2.7	9.5	12.6	.5	.4	.6	.1	.5	1.0
Blacksmiths.....	.3	.2	.2	.3	.1	.1	.4	.6	.3	.6
First class.....	.1	.1	.1	.3	.1	.1	.3	.3	.2	.4
Other classes.....	.2	.1	.1	(⁵)	(⁵)	(⁵)	.1	.3	.1	.2
Blacksmiths' helpers.....	.2	.3	.4	.2	(⁵)	.1	.4	.7	.3	.7
Boilermakers.....	.6	.7	.3	.3	.7	.3	.2	.1	1.5	-----
First class.....	.1	.1	.1	.2	.6	.3	.1	.1	1.0	-----
Other classes.....	.5	.6	.2	.1	.1	(⁵)	.1	(⁵)	.5	-----
Boilermakers' helpers.....	.3	.7	.3	.7	2.0	.6	.2	-----	1.1	-----
Boilers, hand ¹.....	.3	.5	(⁵)	.2	.6	2.4	.9	3.0	-----	-----
First class.....	.1	.3	(⁵)	.2	.6	2.4	.9	.7	-----	-----
Other classes.....	.2	.2	(⁵)	-----	-----	-----	(⁵)	2.3	-----	-----
Burners, acetylene (including gas).....	2.1	1.7	3.0	2.0	3.8	3.5	1.1	1.8	2.0	1.4
First class.....	.7	.7	1.3	1.2	3.2	3.3	.4	1.0	.9	.2
Other classes.....	1.4	1.0	1.7	.8	.6	.2	.7	.8	1.1	1.2
Burners' helpers, acetylene (including gas).....	.2	(⁵)	.5	(⁵)	.2	(⁵)	.4	(⁵)	.2	(⁵)
Carpenters (shipwrights).....	6.0	4.0	6.6	11.4	5.2	3.8	12.0	14.7	4.4	3.9
First class.....	2.4	1.0	4.9	6.7	5.0	3.7	7.1	7.9	3.2	2.3
Other classes.....	3.6	3.0	1.7	4.7	.2	.1	4.9	6.8	1.2	1.6
Carpenters' helpers.....	1.2	.8	1.9	4.1	1.7	1.5	3.1	6.3	.5	.5
Chippers and caulkers (including foundry chippers).....	2.2	2.0	1.1	1.2	2.6	3.7	2.0	2.3	1.8	1.5
First class.....	.7	.8	.6	.6	2.0	3.0	1.2	1.4	1.1	.5
Other classes.....	1.5	1.2	.5	.6	.6	.7	.8	.9	.7	1.0
Coppersmiths.....	.3	.4	.1	.1	.2	.2	.1	.1	.1	-----
First class.....	.1	.2	.1	(⁵)	.2	.1	.1	.1	.1	-----
Other classes.....	.2	.2	(⁵)	.1	(⁵)	.1	-----	(⁵)	-----	-----
Coppersmiths' helpers.....	.4	.3	.2	.1	.2	(⁵)	-----	.2	(⁵)	-----
Crane operators (all types).....	.8	1.0	.9	.5	.5	.9	.6	.8	.9	1.4
First class.....	.4	.6	.9	.5	.5	.9	.3	.4	.5	.6
Other classes.....	.4	.4	(⁵)	-----	(⁵)	-----	.3	.4	.4	.8
Draftsmen (senior and junior).....	1.2	2.2	.8	1.2	.5	.9	.9	3.0	.8	2.0
Drillers (including reamers and countersinkers).....	1.0	.9	.6	(⁵)	1.1	1.0	.6	.5	-----	-----
First class.....	.4	.5	.6	(⁵)	1.1	1.0	(⁵)	.2	-----	-----
Other classes.....	.6	.4	(⁵)	-----	(⁵)	(⁵)	.6	.3	-----	-----
Electricians.....	4.5	4.4	2.7	3.7	4.3	3.7	2.9	2.9	2.6	2.7
First class.....	1.0	1.1	2.2	2.5	3.8	2.6	2.6	1.0	4	.7
Other classes.....	3.5	3.3	.5	1.2	.5	.1	1.3	1.9	2.2	2.0
Electricians' helpers.....	2.1	2.0	2.1	3.7	1.6	.9	1.6	1.4	1.1	1.3
Erectors.....	1.0	.8	.5	-----	.4	-----	1.8	1.9	.5	-----
First class.....	.3	.2	.3	-----	.3	-----	.3	.2	.2	-----
Other classes.....	.7	.6	.2	-----	.1	-----	1.5	1.7	.3	-----
Erectors' helpers.....	.2	.2	.1	-----	.2	-----	2.5	2.9	-----	-----
Foremen (including assistant foremen and quarter men).....	3.2	2.5	1.3	1.1	3.1	1.2	3.9	2.3	5.0	.9
Furnacemen (plate and large shops).....	.1	.2	(⁵)	.2	(⁵)	.3	.1	.3	(⁵)	.1
First class.....	(⁵)	.1	(⁵)	.1	(⁵)	.3	(⁵)	.2	(⁵)	.1
Other classes.....	.1	.1	-----	.1	-----	-----	.1	.1	-----	-----
Handymen, not elsewhere classified.....	.8	.3	-----	-----	-----	-----	-----	-----	.3	-----
Helpers, not elsewhere classified.....	1.8	1.0	.3	(⁵)	.3	.3	.5	1.5	1.9	1.6
Joiners (including wood-working-machine operators).....	1.4	1.6	.5	1.3	.9	1.2	1.3	.7	-----	-----
First class.....	.5	.5	.1	.7	.9	1.2	.9	.5	-----	-----
Other classes.....	.9	1.1	.4	.6	(⁵)	(⁵)	.4	.2	-----	-----
Joiners' helpers.....	.2	.6	(⁵)	.1	.2	.3	.2	.2	-----	-----
Laborers (excluding tank cleaners and janitors).....	7.6	8.2	14.4	13.9	4.6	5.8	4.8	6.5	14.2	18.9

See footnotes at end of table.

Earnings in Ship-Construction Yards

TABLE 2.—Average Hourly Straight-Time Earnings of Day-Shift Ship-Construction Workers, by Region, Occupation, and Class, Spring and Fall of 1942—Con.

Occupation and class	Atlantic Coast		Gulf Coast		Pacific Coast		Great Lakes		Inland	
	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942	Fall 1942	Spring 1942
	Percent of workers									
Layers-out.....	0.5	0.5	0.7	0.7	0.4	0.4	0.1	0.2	0.5	2.2
First class.....	.2	.2	.5	.5	.4	.4	.1	.2	.3	.7
Other classes.....	.3	.3	.2	.2	(¹)	(¹)	(¹)	(¹)	.2	1.5
Leaders.....	2.7	2.8	4.2	3.1	8.5	6.1	3.1	2.4	2.5	2.2
Learners.....	6.7	8.1	4.3	.1	.1	.1	6.2	3.6	2.3	2.4
Loftsmen.....	.4	.5	.4	.3	.2	.6	.4	.3	.3	.9
First class.....	.2	.2	.1	.1	.2	.5	.3	.2	.2	.7
Other classes.....	.2	.3	.3	.2	(¹)	(¹)	.1	.1	.1	.2
Machinists, shop and outside.....	6.5	7.9	3.4	3.6	4.2	3.8	6.0	5.9	6.1	6.7
First class.....	1.9	2.4	2.2	2.4	3.6	3.5	3.2	2.2	1.9	3.4
Other classes.....	4.6	5.5	1.2	1.2	.6	.3	2.8	3.7	4.2	3.3
Machinists' helpers, shop and outside.....	2.2	2.6	1.6	2.1	2.4	2.1	4.9	1.9	2.6	3.3
Molders, foundry.....	.2	.3	.1	.1	(¹)	(¹)				
First class.....	.1	.1	.1	.1	(¹)	(¹)				
Other classes.....	.1	.2								
Painters, brush and spray.....	2.6	3.1	1.7	2.1	2.5	2.8	2.5	2.8	3.0	2.4
First class.....	1.1	1.0	1.4	1.0	2.5	2.8	1.4	.9	1.4	.8
Other classes.....	1.5	2.1	.3	1.1	(¹)	(¹)	1.1	1.9	1.6	1.6
Patternmakers.....	.1	.2	(¹)	(¹)	(¹)	(¹)	.5	.8		
First class.....	.1	.1	(¹)	(¹)	(¹)	(¹)	.5	.8		
Other classes.....	(¹)	.1					(¹)			
Pipe fitters (including plumbers).....	4.7	3.4	2.7	2.7	4.7	3.4	4.3	1.9	5.2	2.7
First class.....	1.2	.9	1.5	1.6	4.0	3.3	3.2	1.4	2.3	.9
Other classes.....	3.5	2.5	1.2	1.1	.7	.1	1.1	.5	2.9	1.8
Pipe fitters' helpers (including plumbers' helpers).....	2.3	2.5	3.1	3.9	3.2	3.1	3.0	1.4	2.7	.9
Plate-shop machine operators.....	.4	.6	.2	.3	2.3	1.6	.3	.6	.6	1.3
First class.....	.1	.2	.1	.1	1.1	1.0	(¹)	.3	.3	.7
Other classes.....	.3	.4	.1	.2	1.2	.6	.3	.3	.3	.6
Plate-shop machine operators' helpers.....	.2	1.2	.2	.2	.3	1.2	1.0	.6	.5	1.3
Regulators.....	.2	.2		.2	.9	.7	.1	.2		
First class.....	.1	.1		.2	.9	.7	.1	.2		
Other classes.....	.1	.1								
Riggers, ship.....	1.3	1.2	.6	.6	1.7	.2	.5	.7		.2
First class.....	.4	.4	.3	.3	1.2	.2	.3	.7		.1
Other classes.....	.9	.8	.3	.3	.5		.2			.1
Riggers, yard and crane.....	.6	.8	1.7	1.8	.7	2.0	.8	1.0	.9	1.1
First class.....	.2	.2	.1	.4	.6	2.0	.3	.7	.7	.5
Other classes.....	.4	.6	1.6	1.4	.1	.5	.7	.2	.2	.6
Rivet heaters.....	.3	.4	.3	(¹)	.1	.3	.2	.2		.1
Rivet holders-on.....	.3	.4	.3	.1	.1	.4	.2	.3		
Rivet passers.....	.2	.3	(¹)	.3		(¹)	.3	.2		
Riveters.....	.4	.5	.3	.4	.2	.3	.6	.7		.1
First class.....	.1	.2	.3	.4	.2	.3	.6	.7		.1
Other classes.....	.3	.3	(¹)	(¹)	(¹)		.1			
Sheet-metal workers (including tinsmiths).....	2.7	3.0	1.7	.4	1.4	1.3	1.2	.4	1.1	1.1
First class.....	.6	.6	1.0	.2	1.3	.8	.9	.2	1.1	.2
Other classes.....	2.1	2.4	.7	.2	.1	.5	.3	.2	1.0	.9
Sheet-metal workers' helpers.....	1.4	1.4	1.5	.2	1.8	.9	.7	.7	.5	.2
Ship fitters.....	6.3	5.8	3.9	3.6	7.2	8.1	3.0	3.1	8.8	7.7
First class.....	.9	.9	1.4	1.8	5.2	6.0	1.6	1.2	2.4	1.8
Other classes.....	5.4	4.9	2.5	1.8	2.0	2.1	1.4	1.9	6.4	5.9
Ship fitters' helpers.....	4.2	2.4	5.6	6.1	4.6	10.1	5.3	3.9	4.9	6.8
Stair builders.....	.6	.9			1.2	2.1	.5			
Tank cleaners.....	(¹)				.6	1.4				.1
Tool and die makers.....	.1	.1	(¹)		(¹)	.1	.1			
First class.....	(¹)	(¹)	(¹)		(¹)	.1	.1			
Other classes.....	.1	.1			(¹)					
Tracers.....	.1	.2	.2	(¹)	.1	.2	.3	.8	.3	.2
Watchmen and guards.....	1.3	1.0	2.1	1.9	1.3	.9	2.0	1.6	2.6	2.1
Welders, acetylene and electric.....	8.2	7.1	7.6	4.0	11.8	12.2	6.8	7.4	13.1	15.2
First class.....	1.4	1.4	3.3	2.5	8.6	11.6	4.7	3.3	6.0	6.1
Other classes.....	6.8	5.7	4.3	1.5	3.2	.6	2.1	4.1	7.1	9.1
Welders' helpers, acetylene and electric.....	.5	.2	3.0	2.6	1.5	1.5	1.7	1.0	1.4	.1

¹ Excluding earnings resulting from extra pay for overtime work.

² Number of workers too small to justify computation of average.

³ Includes a small number of machine bolters.

⁴ Occupation not included in spring 1942 study.

⁵ Less than a tenth of 1 percent.

ATLANTIC COAST

The Atlantic Coast region, despite extensive expansion of the industry in other parts of the country, continues to play a leading role in the building of ships. At the time of the wage survey, a wide variety of ships, ranging from the larger naval and commercial deep-sea vessels to the smaller harbor craft, was being constructed in the yards in this region. Yards in the Atlantic area vary greatly in size.

Atlantic Coast shipyards reported first-shift workers in each of the 60 occupational groups covered by the study. Although considerations of national safety prevent disclosure of the number of workers in these occupations, the relationship of the various occupations to the labor pattern as a whole can be ascertained from the ratio of the number of workers in each occupation to the total number of workers in the 60 occupations studied.

About nine-tenths (89.8 percent) of all the workers studied were found in 28 of the 60 selected occupations, the major concentrations being among acetylene and electric welders (8.2 percent), laborers (7.6 percent), learners (6.7 percent), machinists (6.5 percent), ship fitters (6.3 percent), and carpenters (6.0 percent). Three other occupations—electricians, pipe fitters, and ship fitters' helpers—had between 4 and 6 percent of all workers.

Any discussion of occupational wage rates in the shipbuilding industry should take into consideration the classes or gradations of workers within crafts. As previously pointed out, each craft is divided into a number of classes based on skill requirements. There is, however, no uniformity among regions or even within regions in the classes found within crafts. Only first-class workers and specialists are comparable from yard to yard and between regions. The various classes below first class were therefore combined into one broad group—"other classes."

First-shift workers in the selected occupations in Atlantic Coast yards, as table 2 shows, had hourly straight-time average earnings of \$1.048 in November 1942. Occupational averages ranged from 67.3 cents an hour for tank cleaners to \$1.768 an hour for first-class riveters.

Nearly one-fifth (19.6 percent) of the workers, most of whom were first-class craftsmen, were in occupations in which earnings averaged more than \$1.20 an hour, and another two-fifths (39.1 percent) were in occupations with average earnings of between \$1.00 and \$1.20 an hour. The latter workers, for the most part, belonged to the "other classes" of craftsmen, i. e., from handymen up to but not including first-class workers. Nearly a third of the workers were in occupations with average earnings ranging from 75 cents to \$1.00 an hour. Most of these workers were helpers in the various crafts.

First-class craftsmen generally earned more than the \$1.20 minimum established for such workers under the 1942 stabilization agreement. Because of special circumstances, earnings lower than \$1.20 were found for 5 "first-class" groups of workers—erectors (\$1.198), crane operators (\$1.193), regulators (\$1.169), carpenters (\$1.142), and bolters (\$1.063). Regulators and bolters are not generally considered by Atlantic Coast yards as "first-class skilled mechanics." The relatively low average for carpenters is due to lower wages paid in a few small yards engaged in wooden-boat building and employing a large number of such workers.

These yards, as a rule, have not subscribed to the stabilization program. In the larger yards, however, the rates paid to carpenters approach the minimum of \$1.20 set forth in the zone agreement. The occupation of crane operators as used in this report covers workers operating a wide variety of cranes, not all of which command the \$1.20 rate. Generally, \$1.20 or more an hour was paid for operators of cranes other than bridge cranes, while lower rates prevailed for operators of the bridge type. The payment of rates slightly below the minimum to first-class erectors in a few yards caused the average for the occupation to fall slightly short of \$1.20.

The average earnings for craftsmen designated as "other classes" differed widely among crafts, largely because of variations in the composition of these groups. There was little uniformity in the number of second- and third-class workers and handymen reported by the various yards.

Earnings of shipyard workers, in general, were also influenced to some extent by size of yard and type of construction. Workers in the larger yards averaged about 10 cents more per hour than those in the smaller yards. The latter group includes a number of wooden-boat building operations which, as stated, do not generally subscribe to the stabilization program and generally have a lower wage level. The occupational structure in these yards also differs materially from that in yards building metal ships.

Incentive methods of pay are quite prevalent among Atlantic Coast yards. More than a third (35.7 percent) of the workers surveyed participated in incentive-payment plans and were thus able to increase their basic rates of pay by about 19 percent above the base rate. The net effect of incentive payments was to raise by almost 7 percent the average earnings of the workers in the region as a whole.

Some idea of the variations in earnings between yards may be obtained from the following tabulation which presents the lowest and the highest averages paid to first-class workers in 5 representative crafts. The lowest rates were invariably found in small yards engaged in the construction of wooden ships, while the highest rates were generally found in yards having incentive methods of wage payment.

	<i>Lowest yard average</i>	<i>Highest yard average</i>
Carpenters (shipwrights)-----	\$0. 750	\$1. 661
Chippers and caulkers-----	. 750	2. 576
Electricians-----	. 750	1. 570
Machinists, shop and outside-----	. 750	1. 554
Welders, acetylene and electric-----	. 727	2. 169

GULF COAST

Shipbuilding in yards on the Gulf of Mexico and the East Coast of Florida, the area comprising the Gulf Coast region under the stabilization program, plays an important part in the wartime program. Although not so large in terms of number of yards, employment, or production as the Atlantic and Pacific Coast areas, the industry in the Gulf region is contributing materially to the Nation's fast-growing fleet of large deep-sea and coastwise vessels and smaller harbor craft.

First-shift workers in the Gulf Coast yards were reported in all but 4 of 60 occupational groups studied, and nine-tenths (90.7) percent

were in 24 of these groups (table 2). Approximately 14 percent of the workers were classified as laborers. Other occupations containing more than 5 percent of the workers studied were apprentices (9.5 percent), welders (7.6 percent), carpenters (6.6 percent), and ship fitters' helpers (5.6 percent).

The average hourly straight-time earnings of first-shift workers in the Gulf Coast region amounted to 90.7 cents in November 1942. Individual occupational averages ranged from 61.1 cents for laborers to \$1.428 for foremen.

Somewhat more than one-fourth of the workers studied (28.8 percent) were found in occupations in which hourly earnings averaged more than \$1.16 an hour. These occupational groups were very largely made up of first-class workers who were generally paid the minimum rate of \$1.20 an hour in yards subscribing to the stabilization agreement. In 9 occupations, first-class workers averaged from 0.1 to 2.3 cents less than the first-class minimum rate of \$1.20, owing to the lower wages in a few small yards (generally the wooden-ship yards) which did not subscribe to the stabilization agreement. In 4 other occupations, namely, joiners, erectors, yard and crane riggers, and drillers, average earnings were substantially below the \$1.20 rate (from \$1.07 to \$1.149). In the Gulf Coast region first-class workers in these 4 occupations were not generally considered as being subject to the wage-stabilization minimum.

Another 17 percent of the workers were in occupations in which earnings averaged between 93 cents and \$1.15. This group was made up mostly of second- and third-class craftsmen and handymen, designated as "other classes" in their respective occupations. Only two groups of "other classes" of workers averaged less than 93 cents an hour—painters (87 cents) and yard and crane riggers (71.3 cents).

Average hourly earnings of less than 90 cents were found in occupations employing more than half (54 percent) of the workers in the region. Of these workers, nearly two-fifths were helpers in the various crafts, all of whom had occupational averages of less than 80 cents an hour.

The variations in occupational averages in the Gulf Coast ship-construction yards were influenced by the different wage levels prevailing among the various yards. Typical examples of these differences are individual yard averages ranging from \$1.00 to \$1.526 for first-class welders, from 85 cents to \$1.21 for first-class painters, from 99 cents to \$1.20 for first-class electricians, and from 40 to 63 cents for laborers. Hourly averages by yard for "other classes" of craftsmen as well as nonclassified occupations present similar variations. Although wide variations in earnings exist among yards, considerable uniformity was found in the earnings of workers within the same occupation in the same yard.

PACIFIC COAST

With an average of \$1.135 an hour, the straight-time earnings of first-shift workers in Pacific Coast ship-construction yards were higher than in any of the other 4 regions (table 2). Occupational averages in this region ranged from 88 cents an hour for laborers to \$1.537 an hour for foremen.

Of the 60 broad occupational groups studied, no workers were reported for the "miscellaneous handymen" category. Such workers,

who cannot be identified with any craft, were not found in West Coast yards. About nine-tenths (90.3 percent) of all first-shift workers covered on the West Coast were found in 26 occupational groups. The outstanding occupation from the standpoint of number of workers was that of welders who comprised 11.8 percent of the workers surveyed. Only three other occupational groups had more than 5 percent of the workers studied. These were leaders (8.5 percent), ship fitters (7.2 percent), and carpenters (5.2 percent).

Nearly three-fifths (57.1 percent) of the workers were in occupations with average earnings of \$1.20 or more an hour. This group, except for the foremen, leaders, and draftsmen who are generally recognized as higher-paid supervisory and technical employees, was made up of first-class craftsmen. The minimum wage rate (\$1.20) for first-class skilled workers established under the amended stabilization agreement clearly has been applied broadly in the Pacific Coast yards. Eighteen of the first-class occupations, containing more than two-fifths (43.8 percent) of all workers studied, had average earnings of not less than \$1.20 and in some cases only slightly more than \$1.21 an hour. First-class craftsmen in 5 other occupations—anglesmiths, patternmakers, loftsmen, layers-out, and crane operators—had average earnings considerably higher than the stabilization minimum. These higher averages are the result of special rates agreed upon by labor and management for occupations requiring unusual skills or involving heavy work.

Only 4 groups of first-class workers averaged less than \$1.20 an hour, namely, regulators (\$1.13), yard and crane riggers (\$1.118), drillers (\$1.08), and bolters (95.5 cents). None of the workers in these jobs were considered to be within the scope of the term "first-class skilled mechanics" for which the \$1.20 minimum was established.

Another concentration of workers (21 percent) was found in occupations with average earnings of between 94 and 98 cents an hour. This group includes all of the craftsmen's helpers except anglesmiths' helpers. The latter averaged \$1.08 an hour. The most common rate paid to helpers on the West Coast was 95.0 cents an hour.

On the West Coast, "trainees" correspond to handymen and to the second- and third-class workers ("other classes") found in the other regions. In 14 of the 21 occupations for which data are shown for such workers (trainees), the averages ranged from \$1.06 to \$1.10 an hour.

Locality, size of yard, and type of vessel under construction appear to have little bearing on wages in West Coast shipyards. In general, the averages conform closely to the wage scale set forth in an agreement entered into by the West Coast operators and the Metal Trades Department of the American Federation of Labor. Any variations from these rates are attributable primarily to premium rates paid to specialists or for work performed under less desirable conditions.

GREAT LAKES REGION

Although smaller both in number of yards and workers than the industry in the seacoast regions, the Great Lakes shipbuilding operations nevertheless contribute measurably to the production of smaller commercial vessels and war craft.

Exactly 88 percent of all the workers studied in this region were found in 25 of the 60 occupational groups covered in the survey and more than a fifth of these were in the carpenter and welder crafts. The other 12 percent of the labor force was spread among 31 occupations. No workers were reported in only 4 occupations—coppersmiths' helpers, foundry molders, unclassified handymen, and tank cleaners.

Day-shift workers had average straight-time hourly earnings of 99.4 cents (table 2). The range in the averages of individual occupations was from 67.2 cents an hour for apprentices to \$1.469 for first-class patternmakers. Exactly three-eighths of the workers surveyed were in occupations with average earnings of more than \$1.12 an hour. This group was made up very largely of first-class craftsmen. Groups designated as "other classes" formed a major part of another 25 percent of the workers in occupations with average earnings ranging from 90 cents to slightly less than \$1.08 an hour. Occupations in which earnings averaged less than 90 cents an hour included all of the helper groups and accounted for the remaining two-fifths of those workers included in this study.

First-class workers in only three of the occupations generally recognized as being subject to the stabilization minimum had average earnings either equal to or in excess of \$1.20 an hour. This fact is not to be construed, however, as indicating a general disregard for the shipbuilding wage-stabilization program. On the contrary, the minimum rate of \$1.20 was quite generally paid to first-class skilled mechanics in yards subscribing to the wage-stabilization agreement. There were a few yards, however, that did not subscribe to the agreement and, therefore, did not pay the \$1.20 minimum to first-class skilled mechanics, while other yards accepted the agreement with some rate modifications. Despite this fact, variations in the average rates from yard to yard for the same occupation were not so pronounced as in most of the other regions. For example, yard averages for first-class carpenters fell in the narrow range of from \$1.12 to \$1.20 an hour, and the range for first-class welders was from \$1.12 to \$1.278. Among the occupations showing the greatest differences among yards was that of laborers, with average earnings ranging from 58.5 to 81.3 cents.

INLAND REGION

Shipbuilding activities in the broad area designated as the Inland region for purposes of this analysis have forged ahead rapidly since May 1942, and now play an important part in both the commercial and naval wartime shipbuilding program. Decided increases have occurred not only in the number of workers employed but also in the number of yards. Most of the yards in this region are situated on the Mississippi and Ohio rivers and their tributaries.

The occupational pattern in this area was less complex than in the other areas, all of the workers reported being found in 43 of the 60 occupational groups studied. About two-fifths of the workers were found to be laborers (14.2 percent), welders (13.1 percent), ship fitters (8.8 percent), and machinists (6.1 percent). Another fifth of the

workers were in 4 occupations—carpenters, foremen, pipe fitters, and ship fitters' helpers—each having between 4 and 6 percent of the workers surveyed.

The straight-time earnings of the day-shift workers in the Inland area averaged 97.4 cents an hour (table 2), 2.0 cents an hour less than workers in the Great Lakes area. Among the individual occupations, foremen were paid the highest (\$1.363) and blacksmiths' helpers the lowest (66 cents) average wages.

Occupations with average hourly earnings of more than \$1.00 included about one-third (34.2 percent) of the first-shift workers. In addition, a fourth of the workers (27.8 percent) had occupational average earnings of between 90 cents and \$1.00. First-class craftsmen comprised the major part of the former group, and "other classes" of workers (second- and third-class craftsmen and handymen) accounted for the greater part of the latter group. The occupations of craftsmen's helpers and laborers were numerically the most important of the occupations with average hourly earnings ranging from 66.0 cents to 89.0 cents. Occupational averages falling within this range included about two-fifths of the workers covered in this report.

Wages in this region are influenced to a considerable extent by such factors as size and type of yard and method of wage payment. On the average, the larger yards pay about 17 cents more per hour than the smaller operations. Of all the workers studied, about one-third (32.2 percent) received additional compensation under various forms of incentive-wage plans. As a result, the income of these workers was approximately 5 percent (4.9 cents) more than it would have been if they had received only their basic wage rates. These incentive payments raised the regional average by about 1.5 cents.

There was considerable variation among yards in rates paid for the same job. Yard averages, for example, ranged from 72.5 cents to \$1.206 for first-class carpenters, from 82.5 cents to \$1.306 for first-class machinists, from 80 cents to \$1.276 for first-class welders, and from 42.9 to 94.5 cents for laborers.

Although shipbuilding operations in this region do not come within the scope of the industry's wage-stabilization program, several of the yards have adopted wage scales similar to those in the other areas. Average hourly earnings approaching \$1.20 or higher than this amount were found in 10 of the 18 occupations for which data are shown for first-class workers.

Interregional Comparisons

The straight-time earnings of day-shift workers in private ship construction varied considerably from region to region in November 1942. The highest general wage level was found in the Pacific Coast region, where workers earned an average of \$1.135 an hour (table 2).

The Atlantic Coast region ranked second with a general average of \$1.048 an hour. In this region the earnings of the workers were influenced to a considerable extent by incentive-wage payments. As previously pointed out, approximately one-third of the workers in this region participated in incentive-earnings plans. In the other areas, incentive earnings were found to have comparatively little effect on the general level of earnings. The lowest wages prevailed among Gulf Coast yards, where workers averaged 90.7 cents an hour. Average earnings in the Great Lakes and Inland areas were only 2 cents apart, the respective averages being 99.4 and 97.4 cents an hour.

The distribution of yard average hourly earnings provides a useful indication of intraregional variations in plant wage levels and, in addition, sheds light on regional differences. Table 3 shows the percentage of yards in each region with specified wage levels, and the proportions of each regional labor force employed in yards with the designated levels of earnings. The least variation in plant averages was found in the Pacific Coast region, where over nine-tenths of the yards, employing more than 99 percent of the workers, had averages ranging from \$1.05 to \$1.20 an hour. Furthermore, 71.1 percent of all workers were in yards having averages falling within the narrow limits of \$1.10 to \$1.15 an hour. On the other hand, the greatest dispersion in yard averages was found in the Atlantic Coast region, where the range was from slightly more than 60 cents to just under \$1.25 an hour. However, over three-fifths of the Atlantic Coast yards, employing 71.0 percent of the workers, had averages ranging from 95 cents to \$1.15 an hour.

In the Gulf Coast region, most of the yards, with 92.3 percent of the workers, had averages ranging between 75 and 95 cents an hour. Within this group, however, the relationship between the distribution of yards and that of workers is somewhat different. Thus, yard-average earnings in one-seventh of the yards with 51.1 percent of all the workers fell between 90 and 95 cents, while three-fifths of the yards with but two-fifths of all the workers had average wage levels of less than 90 cents an hour.

In neither the Great Lakes nor the Inland regions were the yard averages concentrated at any single level. Most of the workers in the former area were employed in yards paying between 90 cents and \$1.05 an hour. Although over three-fourths of the workers in the Inland area were in yards in which hourly earnings averaged between 95 cents and \$1.10, there was a fairly heavy concentration in the interval from 75 to 80 cents.

Earnings in Ship-Construction Yards

TABLE 3.—Distribution of Shipyards and Workers by Average Hourly Yard Earnings and Region, Fall of 1942

Yard-average earnings group	United States	Atlantic Coast	Gulf Coast	Pacific Coast	Great Lakes	Inland
Percent of yards with specified yard-average earnings						
60.0 to 64.9 cents	2.3	3.2	-----	-----	-----	11.1
65.0 to 69.9 cents	2.3	3.2	-----	-----	-----	11.1
70.0 to 74.9 cents	2.3	3.2	7.7	-----	-----	-----
75.0 to 79.9 cents	8.1	6.5	23.0	-----	-----	22.2
80.0 to 84.9 cents	3.5	-----	15.4	-----	-----	-----
85.0 to 89.9 cents	8.1	12.9	23.1	-----	10.0	-----
90.0 to 94.9 cents	5.8	3.2	15.4	-----	10.0	11.1
95.0 to 99.9 cents	11.6	22.6	-----	-----	20.0	11.1
\$1.000 to \$1.049	11.6	12.9	7.7	-----	20.0	22.3
\$1.050 to \$1.099	12.8	12.9	7.7	21.8	10.0	11.1
\$1.100 to \$1.149	19.9	12.9	-----	47.8	20.0	-----
\$1.150 to \$1.199	7.0	-----	-----	21.8	10.0	-----
\$1.200 to \$1.249	2.3	6.5	-----	-----	-----	-----
\$1.250 to \$1.299	1.2	-----	-----	4.3	-----	-----
\$1.300 to \$1.349	1.2	-----	-----	4.3	-----	-----
All earnings	100.0	100.0	100.0	100.0	100.0	100.0
Percent of workers in yards with specified yard-average earnings						
60.0 to 64.9 cents	0.6	1.4	-----	-----	-----	0.5
65.0 to 69.9 cents	.2	.4	-----	-----	-----	1.5
70.0 to 74.9 cents	.2	.2	0.7	-----	-----	-----
75.0 to 79.9 cents	2.1	1.4	5.0	-----	-----	15.7
80.0 to 84.9 cents	1.7	-----	8.8	-----	-----	-----
85.0 to 89.9 cents	8.9	8.3	27.4	-----	6.9	-----
90.0 to 94.9 cents	10.9	.3	51.1	-----	17.4	4.6
95.0 to 99.9 cents	11.7	24.3	-----	-----	32.6	17.7
\$1.000 to \$1.049	11.5	20.3	4.0	-----	26.7	41.7
\$1.050 to \$1.099	7.5	11.1	3.0	4.2	9.3	18.3
\$1.100 to \$1.149	29.8	15.3	-----	71.1	6.7	-----
\$1.150 to \$1.199	8.1	-----	-----	24.4	.4	-----
\$1.200 to \$1.249	6.7	17.0	-----	-----	-----	-----
\$1.250 to \$1.299	.1	-----	-----	.2	-----	-----
\$1.300 to \$1.349	(1)	-----	-----	.1	-----	-----
All earnings	100.0	100.0	100.0	100.0	100.0	100.0

(1) Less than a tenth of 1 percent.

A more satisfactory method of measuring the extent of regional differences involves a comparison of average earnings for a selected group of individual occupations. Comparative wage data are presented by region in table 4 for workers of all classes or grades in 38 crafts and for first-class workers in 16 crafts. Among the broad occupational groups, covering all classes of workers, the highest wages for 30 of the 38 occupations were paid in Pacific Coast yards. The Atlantic Coast ranked first in only 6 occupations and the Inland region in only 2 occupations. The high level of earnings on the West Coast, as indicated by general occupational averages covering craftsmen of all classes, was very largely due to the greater proportion of first-class workers in this region. Of the craftsmen in the 38 occupations, 82 percent on the West Coast were classified as first class. This compares with 27 percent in the Atlantic region, 57 percent in the Gulf region, 60 percent in the Great Lakes region, and 43 percent in the Inland region.

With respect to first-class workers only, the Atlantic Coast region had the highest average earnings in 11 of the 16 occupations for which data are shown in table 4. In the 5 remaining occupations, Pacific Coast yards were highest in 4, and the Gulf Coast yards were highest in 1 occupation. The high level of earnings in the Atlantic Coast region was due primarily to the influence of incentive methods of wage payment.

TABLE 4.—Average Hourly Straight-Time Earnings of Day-Shift Workers in Selected Occupations in Ship-Construction Yards, by Region, Fall of 1942

Occupation and class	Atlantic Coast	Gulf Coast	Pacific Coast	Great Lakes	Inland
<i>All classes</i>					
Anglesmiths.....	\$1.165	\$1.227	\$1.273	\$0.954	\$1.284
Apprentices.....	.824	.815	1.019	.672	.795
Blacksmiths.....	1.141	1.156	1.165	1.147	.985
Blacksmiths' helpers.....	.880	.751	.967	.871	.960
Boilermakers.....	1.124	1.093	1.173	1.150	1.121
Boilermakers' helpers.....	.929	.706	.950	.835	.928
Burners, acetylene (including gas).....	1.123	1.100	1.179	1.093	1.063
Burners' helpers, acetylene (including gas).....	.862	.702	.950	.797	.879
Carpenters (shipwrights).....	1.035	1.135	1.197	1.094	1.074
Carpenters' helpers.....	.802	.680	.943	.811	.812
Chippers and caulkers (including foundry chippers).....	1.219	1.124	1.180	1.121	1.116
Crane operators (all types).....	1.154	1.177	1.286	1.116	1.161
Draftsmen (senior and junior).....	1.382	1.163	1.321	1.121	1.301
Electricians.....	1.107	1.154	1.191	1.126	1.013
Electricians' helpers.....	.853	.682	.955	.796	.819
Erectors.....	1.024	1.081	1.147	.976	.966
Foremen (including assistant foremen and quartermen).....	1.640	1.428	1.537	1.372	1.363
Helpers, not elsewhere classified.....	.733	.669	.941	.718	.786
Laborers (excluding tank cleaners and janitors).....	.718	.611	.880	.707	.743
Leaders.....	1.357	1.322	1.335	1.264	1.279
Learners.....	.891	.740	.950	.906	.697
Loftsmen.....	1.218	1.153	1.313	1.120	1.224
Machinists, shop and outside.....	1.138	1.123	1.187	1.109	1.052
Machinists' helpers, shop and outside.....	.840	.695	.951	.791	.824
Painters, brush and spray.....	1.176	1.143	1.119	1.070	1.050
Pipe fitters (including plumbers).....	1.092	1.112	1.183	1.119	1.077
Pipe fitters' helpers (including plumbers' helpers).....	.864	.702	.949	.798	.807
Plate-shop machine operators.....	1.108	1.077	1.149	1.063	1.110
Plate-shop machine operators' helpers.....	.867	.713	.950	.834	.830
Riggers, yard and crane.....	.901	.736	1.109	.967	1.071
Sheet-metal workers (including tinsmiths).....	1.146	1.121	1.194	1.163	1.022
Sheet-metal workers' helpers.....	.882	.671	.956	.811	.848
Ship fitters.....	1.100	1.079	1.172	1.097	1.023
Ship fitters' helpers.....	.843	.682	.960	.799	.742
Tracers.....	.754	.837	.902	.759	1.017
Watchmen and guards.....	.760	.665	.901	.767	.713
Welders, acetylene and electric.....	1.231	1.106	1.165	1.093	1.072
Welders' helpers, acetylene and electric.....	.827	.748	.967	.777	.782
<i>First class</i>					
Blacksmiths.....	1.222	1.214	1.205	1.193	1.100
Boilermakers.....	1.360	1.290	1.300	1.200	1.194
Burners, acetylene (including gas).....	1.222	1.209	1.200	1.162	1.194
Carpenters (shipwrights).....	1.142	1.196	1.203	1.186	1.162
Chippers and caulkers (including foundry chippers).....	1.306	1.200	1.204	1.180	1.186
Crane operators (all types).....	1.193	1.185	1.290	1.177	1.224
Electricians.....	1.268	1.198	1.206	1.180	1.177
Erectors.....	1.198	1.124	1.206	1.122	.931
Loftsmen.....	1.402	1.406	1.325	1.167	1.303
Machinists, shop and outside.....	1.291	1.200	1.203	1.175	1.186
Painters, brush and spray.....	1.293	1.192	1.202	1.142	1.128
Pipe fitters (including plumbers).....	1.251	1.198	1.200	1.168	1.171
Riggers, yard and crane.....	1.025	1.080	1.118	1.075	1.081
Sheet-metal workers (including tinsmiths).....	1.385	1.199	1.204	1.198	1.225
Ship fitters.....	1.255	1.203	1.203	1.177	1.189
Welders, acetylene and electric.....	1.516	1.260	1.200	1.184	1.174

Application of Stabilization Program

Occupational averages for first-class workers presented earlier in this analysis tend to show that the minimum wage of \$1.20 provided by the zone standard agreements for the Atlantic, Gulf, Pacific, and Great Lakes shipbuilding areas has been widely applied. There is also evidence of the payment of this rate in the Inland area, although the stabilization program does not extend to this area.

In the four regions subject to the stabilization program, the wage data for November 1942 indicate that first-class workers in 25 crafts were considered "standard skilled mechanics" and received the minimum stabilization rate of \$1.20. These crafts are as follows:

Anglesmiths	Machinists, shop and outside
Blacksmiths	Molders, foundry
Boilermakers	Painters, brush and spray
Burners, acetylene	Patternmakers
Carpenters (shipwrights)	Pipe fitters
Chippers and caulkers	Plate-shop machine operators
Coppersmiths	Riggers, ship
Crane operators	Riveters
Electricians	Sheet-metal workers
Furnacemen	Ship fitters
Joiners	Tool and die makers
Layers-out	Welders, acetylene and electric
Loftsmen	

Supervisory and specialized workers, such as draftsmen, have been excluded from the above list, as their rates generally are not closely related to the application of any regulatory measures. Drillers have also been eliminated from the list, as rates considerably below \$1.20 were very often paid to first-class workers in this craft. The higher earnings for drillers in the Atlantic Coast region result from incentive-wage methods rather than from application of the zone minimum.

In the Pacific Coast region the average earnings for first-class workers in each of the listed occupations for which figures can be shown equal or exceed \$1.20 an hour. In addition, first-class erectors are also subject to the \$1.20 minimum in this area.

All but 1 of the 25 occupations enumerated above show average earnings for first-class workers approaching or exceeding \$1.20 an hour in the Atlantic Coast region. Carpenters, however, averaged only \$1.142 an hour. Despite this relatively low figure, most yards paid the zone minimum to these craftsmen. The lower figure shown for this occupation is the result of low rates paid to large numbers of carpenters employed in a few yards engaged in building wooden boats. Generally these yards do not subscribe to the zone standard agreement.

Among Gulf Coast yards, the average earnings of first-class workers in all but 2 of the 25 occupations were either relatively close to or exceeded the stabilization minimum. Joiners and plate-shop machine operators averaged \$1.149 and \$1.177, respectively. Sub-standard rates in a few yards accounted for these lower average earnings.

In only three occupations—boilermakers, patternmakers, and riveters—did first-class workers in the Great Lakes region average as much as or more than \$1.20 an hour. In 14 other occupations, however, first-class workers received average wages within 4 cents of the minimum. These differences can be attributed, in most cases, to the lower rates paid in a few of the yards and to the practice in some yards

of hiring first-class workers at less than \$1.20 an hour for a short period of time. The low earnings of ship riggers (\$1.016) resulted from employment of most of these workers in a few yards at sub-standard rates. In general, however, it is reasonable to conclude that the zone agreement minimum for this region was applied, at least in a modified form, in most of the yards.

Earnings Trend Between Spring and Fall, 1942

In the fall of 1942, as table 5 indicates, the average hourly straight-time earnings of day-shift workers in ship-construction yards for the country as a whole, \$1.044, were 8.8 percent (8.4 cents) higher than the average of 96.0 cents an hour reported in the spring of 1942. These figures are based on data for all of the yards covered in the two periods.

TABLE 5.—Average Hourly Straight-Time Earnings of Day-Shift Ship-Construction Workers in Selected Occupations, All Yards and Identical Yards, by Region

Region	All yards			Identical yards		
	Average hourly earnings		Increase (cents)	Average hourly earnings		Increase (cents)
	Fall	Spring		Fall	Spring	
United States.....	\$1.044	\$0.960	8.4	\$1.069	\$0.959	11.0
Atlantic.....	1.048	.966	8.2	1.070	.969	10.1
Gulf.....	.907	.776	13.1	.892	.761	13.1
Pacific.....	1.135	1.034	10.1	1.138	1.035	10.3
Great Lakes.....	.994	.861	13.3	1.001	.863	13.8
Inland.....	.974	.795	17.9	.958	.795	16.3

As table 5 shows, the largest increase in earnings among the regions occurred in the Inland area, where the average rose from 79.5 cents in the spring to 97.4 cents in the fall of 1942. This area employs a relatively small proportion of the workers in the industry. In the two major ship-construction areas, Atlantic and Pacific Coast regions, comparison of the earnings data relating to all plants for the two periods reveals the smallest increases, 8.2 and 10.1 cents an hour, respectively. Changes in the Gulf Coast and Great Lakes areas were practically identical, amounting to 13.1 cents in the former and to 13.3 cents in the latter region.

It should be pointed out that the above figures for the two periods are based on somewhat different samples, and may not precisely measure the changes that did take place between the spring and fall of 1942. Because of the rapid expansion of the industry, the sample used in the survey made in the fall was considerably larger than that used in the spring of 1942.

Wage data for identical plants probably provide the most accurate measure of wage changes in the industry since the spring of 1942. Figures for identical yards, presented in table 5, are based upon a substantial proportion of the total number of yards in each region.

It will be seen that the increases shown for identical yards reporting in both the spring and fall of 1942 in the Gulf, Pacific, and Great Lakes regions closely approximate the increases shown for all yards reporting in the respective regions in the two periods. In the Atlantic Coast

area, however, the increase for identical yards was higher by 1.9 cents than that shown for all yards in this region. On the other hand, data for the identical yards in the Inland area show an increase of 16.3 cents or 1.6 cents less than that for all yards. The general increase for the identical yards combined was 2.6 cents greater than the increase shown for all yards.

A more extensive application of incentive-wage methods accounts in a large part for the higher absolute change based on identical yards in the Atlantic Coast area. In general, incentive-wage payment plans were not found in the additional yards covered in the fall survey. The inclusion of these yards in the fall sample naturally tended to lower the general average for the region. In the Great Lakes region, a number of the yards added to the sample in the fall of 1942 had higher wage structures than those covered in the spring survey. This tended to raise somewhat the average for that region.

In the four regions the absolute increases were greater than those provided for under the zone stabilization agreements (8 cents in all regions except on the Gulf Coast where a sliding scale of from 9 cents for the lowest to 13 cents for the highest paid workers was adopted). Increases over and above those provided for in the stabilization agreements may be attributed in part to the upgrading of workers and in part to the acceptance of the stabilization program by a greater number of yards. The sharp increase in average earnings in the Inland region, which, as previously stated, does not come within the scope of the wage-stabilization program, has resulted from a general raising of the rates in this region to levels relatively comparable to those found in other areas.