

UNITED STATES DEPARTMENT OF LABOR

JAMES J. DAVIS, Secretary

BUREAU OF LABOR STATISTICS

ETHELBERT STEWART, Commissioner

**BULLETIN OF THE UNITED STATES }
BUREAU OF LABOR STATISTICS } No. 523**

WAGES AND HOURS OF LABOR SERIES

**WAGES AND HOURS IN THE
MANUFACTURE OF AIRPLANES
AND AIRCRAFT ENGINES, 1929**

Dhananjayrao Gadgil Library



GIPE-PUNE-038590



**SERVANTS OF INDIA SOCIETY'S
BRANCH LIBRARY
BOMBAY**

NOVEMBER, 1930

**UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1930**

X9(053): 951-952.73
G 0

38590

CONTENTS

	Page
Introduction.....	1
Average hours and earnings, by occupation.....	2
Average hours and earnings in 1929, by district.....	4
Classified earnings.....	5
Regular or customary full-time hours.....	7
Classified full-time hours.....	7
Changes in hours and rates since January 1, 1928.....	9
Pay for overtime work on Sunday and holidays.....	10
Bonus systems.....	11
Days actually worked in one week.....	12
Growth of the airplane industry.....	13
General tables.....	15
TABLE A.—Average number of days on which employees worked, average full-time and actual hours and earnings per week, average earnings per hour, and per cent of full time worked, 1929, by occupation, sex, and district....	16
TABLE B.—Average and classified earnings per hour in specified occu- pations, 1929, by sex and district.....	28
TABLE C.—Average and classified full-time hours per week in 23 speci- fied occupations, 1929, by sex and district.....	34
TABLE D.—Average and classified hours actually worked in one week in 23 specified occupations, 1929, by sex and district..	38
TABLE E.—Average and classified actual earnings in one week in 23 specified occupations, 1929, by sex and district.....	44
Appendix.—Definitions of occupations.....	50

APPENDIX.—DEFINITIONS OF OCCUPATIONS

AIRPLANES

Assemblers, detail, do bench work, such as fitting wheels, assembling axles, putting on connection for control cables, etc., preparatory to final assembly. They also attach wood and metal connectors, brackets, etc., to metal frames of fuselages and to tail surfaces and assemble the instrument boards.

Assemblers, final, put together the various complete units, such as fuselages, wings, landing gears, and engines, and secure them with bolts, nuts, etc., and install windshields, controls, instrument boards, tanks in center sections, streamlines, also landing, flying, incident, and stagger wires.

Cabinetmakers lay wood floors in the fuselages, fit window and door moldings, build cockpit arches where wood is used, and perform any other woodwork in the fitting and trimming of the cabins.

Cable splicers attach the fittings and splice and install the control cables.

Coppersmiths bend and fit oil and gas lines.

Coverers cut by hand and fit the fabric covering material by sewing or tacking to fuselage wings and tail surfaces or apply wood or metal covering or "skin" over the completed frames.

Cowl makers shape and form all types of cowling by hand.

Drill-press operators operate radial, multiple spindle, gang, or automatic drill presses.

Electricians do the necessary electric wiring and connect the instruments.

Filters and bench hands chip, file, ream, and fit machine parts to give them proper relation to each other and allowance for correct mechanical adjustment in their assembly.

Frame builders, fuselage, fit and align the parts of the fuselage frames in a jig, securing wooden parts with bolts, steel tubing by tack welding or clamps, and duralumin parts by riveting. In the manufacture of flying boats they lay the keels, assemble the stringers of the hulls, the frame of the cabins, and the sponsons.

Frame builders, tail surfaces, fit and align the parts of the tail surface frames in a jig, frequently performing the operations at a bench. They secure the wooden parts with bolts, steel tubing by tack welding or clamps, and duralumin parts by riveting.

Frame builders, wing, place the spars, which run longitudinally within the wing, in a jig, arrange the ribs crosswise with the spars, glue wooden ribs, bolt or rivet metal ribs in place, and attach stringers or other forms of bracing at right angles or diagonally to the ribs to hold them in place.

Helpers are workers who exercise some degree of skill in assisting workers engaged in the more highly skilled occupations.

Inspectors inspect stock at the various stages of machining, examine sheet-metal stampings, seaming and finishing, tools and cutters in the tool room, forgings, wire and spar building, fuselage and woodwork, and the various stages of assembly or the completed planes.

Laborers truck or carry material about the shop or yard, give unskilled assistance to other employees, do sand blasting, load and unload cars, sweep, rub machines, and do other common unskilled work.

Lathe operators operate lead screws, low swing, cam, and tool (engine) lathes, and turret lathes.

Machinists (a) repair or adjust one or more kinds of machine tools used in a machine shop; (b) set one or more kinds of automatic or semiautomatic machine tools for others to operate; (c) set up and operate at least most of the kinds of machine tools usually found in machine shops. Each of these three groups may also do bench fitting. If a man is qualified as an all-round machinist but is actually operating only a milling machine he would be classified as a "milling machine operator"; if required to operate various tools, he would be classified as a "machinist."

Milling-machine operators operate plain, universal, horizontal, vertical, cam, hand, automatic, keyway, and thread mills, profilers, etc.

DEFINITIONS OF OCCUPATIONS

Painters, hand, apply dopes, oxide paints, varnishes, or pyroxylin substances to parts and covering of aircraft by the hand-brush method.

Painters, letterers, and strippers, apply color varnishes and paints in the letter and decorating of the interior and exterior of the craft.

Painters, spray, apply dopes, oxide paints, varnishes, and pyroxylin substances to the parts and covering of aircraft by the "air-brush" or spray method.

Patternmakers build wooden or metal models for castings or wooden jigs for the assembly of ribs, spars, wings, tail sections, etc.

Polishers and rubbers use sandpaper to clean and roughen surfaces to be painted; or other coarse abrasives, either dry or with water, oil, or other liquids, to perform the rubbing down of the different coats of paint, stain, or varnish.

Rib builders work at benches and assemble in a jig the parts of the ribs. Wooden parts are already cut and shaped and are secured by tacking or gluing. Metal parts are formed in the jig and are secured usually by riveting.

Screw-machine operators operate hand-screw machines, semiautomatic, full automatic screw machines, or automatic lathes.

Sewing-machine operators sew the fuselage and tail surface covering by machine prior to the fitting of the fabric over the frames.

Sheet-metal machine operators use various sheet-metal machines, such as bending, breaking, crimping, flanging, nibbling, and rolling machines, square and round shears, punch presses, etc.

Sheet-metal workers, hand, shape and form by hand the gas tanks, radiators, etc.

Spar builders form the spars by gluing or otherwise fastening together thin laminations of wood, or build up the metal beams or spars, using either steel or duralumin. Spars consisting of a single timber are gouged out by the spar builders at intervals, to reduce the weight, and blocks of hardwood are attached to the top and bottom to support the struts.

Testers, ground, perform a running test under propeller load after installation of motors. The test is for revolutions per minute, air pressure, oil pressure, temperature of oil, charging rate of generator, vibration, etc.

Toolmakers are skilled workers who make and repair tools, metal jigs, dies, and gauges.

Upholsterers cut the material and install all leather or artificial leather or other similar upholstering material in the cabins and cockpits, on pontoon bumpers, or other places where upholstering is required.

Welders use a hand torch or an electric arc to weld or braze tubular and metal joints in connection with aircraft construction and also broken metal parts, aluminum stock, and machine-tool parts. The group includes spot welders.

Woodworking-machine operators cut out by machine sections of spars, ribs, stringers, flanges, cabin trimmings, etc.

Other employees are skilled or semiskilled workers, too few in number to be classified separately, and which can not properly be included in any of the classified occupations.

AIRCRAFT ENGINES

Apprentices work under the supervision of skilled mechanics, serving a specified period of time to learn the work of the skilled occupations of the industry.

Assemblers bring together the various parts, pieces, or units of which an engine consists and secures them with bolts, nuts, or screws, thereby forming a final unit.

Blacksmiths make light and medium-sized forgings and do general anvil work, often being called upon to harden hand and machine tool bits by heating in the forge and quenching in oil, water, or other liquid. The group includes "light fire" blacksmiths, hand hammermen, tool hardeners or temperers, and tool dressers.

Boring-mill operators operate bullards, "hole hog," horizontal, and vertical boring mills.

Coppersmiths or tinsmiths bend and form aluminum intake pipes, ignition wire manifolds (made from brass tubes), copper gasoline and oil pipes, air heaters, radio shielding tail pipes, exhaust pipes, collector ring manifolds, etc.

Drill-press operators operate radial, multiple spindle, gang, or automatic drill presses.

Filters and bench hands do necessary filing, chipping, scraping, reaming, and fitting of machine parts to give them proper relation to each other and allowance for correct mechanical adjustment in their assembly. The classification does not include workers who do assembling only.

Grinding-machine operators operate rough, surface, tool, plain, universal, or cutter grinders. The group includes lapping-machine operators.

AIRPLANES AND AIRCRAFT ENGINES

Helpers not otherwise specified are workers who exercise some degree of skill assisting others engaged in the more highly skilled occupations. They help following skilled workers:

Assemblers	Erectors.	Millwrights.
Babbitters.	Fitters.	Pattern makers.
Buffers.	Flangers.	Pipe fitters.
Carpenters.	Gear-cutter operators.	Planer operators.
Coppersmiths.	Inspectors.	Riggers.
Drill-press operators.	Ironworkers.	Sheet-metal workers.
Electricians.	Layout men.	Tinners.
Enamelers.	Machine-tool operators.	

Blacksmiths' helpers and machinists' and toolmakers' helpers are not included in this classification.

Inspectors examine stock at the various stages of machining; sheet-metal stamping, wiring, seaming, and finishing; tools and cutters in the tool room; discarded material for salvage purposes; the various stages of assembly; forgings; shipments received and shipping and packing.

Laborers truck or carry material about the shop or yard, give unskilled assistance to other employees, do sandblasting, load and unload cars, sweep, rub machines, and do other common unskilled work. The following are included:

Carriers.	Furnace tenders' helpers.	Stock-room and store-room labor.
Casting cleaners.	Heat treaters' helpers.	Truckers (not electric).
Chippers (chip pullers).	Loaders.	Tumbler operators.
Picklers.	Roustabouts.	Warehouse labor.
Plating-room and receiving laborers.	Sandblasters.	Wheelers.
Sweepers.	Scrap wheelers.	Window washers.
Testers' helpers.	Shipping labor.	Yard labor.
Tool-crib and tool-room helpers.	Stockmen.	Any other general or common labor.
	Stock-keepers' helpers.	
	Stock pilers.	

This classification does not include persons belonging under blacksmiths' helpers, machinists' and toolmakers' helpers, or helpers not otherwise specified.

Lathe operators, engine, operate lead screw, low swing, cam, or tool (engine) lathes.

Lathe operators, turret, operate chucking lathes or other turret lathes, as Monitor, Gisholt, Jones and Lamson (J. & L.), American, Libby, etc.

Machinists (a) repair or adjust one or more kinds of machine tools used in a machine shop; (b) set one or more kinds of automatic or semiautomatic machine tools for others to operate; (c) set up and operate at least most of the kinds of machine tools usually found in machine shops.

Each of these three groups may also do bench work and fitting. If a man is qualified as an all-round machinist but actually operates only a milling machine, for example, during the pay period covered, he is classified as a "milling-machine operator," while if required to operate various tools he is classified as a "machinist." The classification includes machine-tool repairers.

Machinists' and toolmakers' helpers are persons with some degree of skill who assist machinists and toolmakers in their work.

Milling-machine operators operate plain, universal, horizontal, vertical, cam, hand, automatic, keyway, or thread mills, profilers, or any other milling machines not specified.

Packers grease, clean, wrap, and crate engines for shipment.

Paint sprayers spray outside parts such as manifolds, cylinders, cylinder heads, shutters, etc., with enamel.

Polishers and buffers use abrasive wheels to polish metals and buffing wheels to obtain luster.

Screw-machine operators operate hand-screw machines, semiautomatic, full automatic, or automatic lathes.

Sheet-metal machine operators run various sheet-metal machines, such as bending, breaking, crimping, flanging, nibbling, and rolling machines, square and round shears, and punch presses.

Testers place the engine on test stand and run it under propeller load to determine if the running parts develop the expected standards.

Toolmakers are skilled workers who make and repair tools, jigs, dies, and gauges.

Other precision-machine operators operate broachers, bolt cutters, burring and centering machines, gear cutters or gear generators, hobbers, key setters, planers,

DEFINITIONS OF OCCUPATIONS

pointing machines, shapers, slotters, special or single-purpose lathes, surface, facing, pulley, speed, spinning, or wristing lathes, tapping machines, thread or trimming machines.

Other skilled employees are workers skilled in the performance of a trade, specialized kind of work who can not otherwise be classified under a specific occupation. The group includes such workers as:

Air-compressor engineers.	Gear straighteners.	Shrink-oven tenders.
Airplane mechanics.	Layout men.	Skilled working foremen.
Braziers.	Millwrights.	Tool demonstrators.
Carbonizers.	Painters (brush).	Welders.
Carpenters.	Pattern makers.	Woodworking-machine operators.
Case hardeners.	Pipe benders.	
Copper platers.	Pipe fitters.	
Electricians.	Saw filers.	

Other employees include all workers whose duties require little or no skill and who are not provided for elsewhere, as:

Belt men.	Learners.	Rivet passers.
Bolt headers.	Markers.	Shipping clerks.
Cold-saw operators.	Messenger boys (shop).	Sorters.
Convey or operators.	Oilers.	Stock keepers.
Crane followers or hitchers.	Order pickers.	Tool chasers.
Electric truckers.	Pressmen (air).	Tool tracers.
Elevator operators.	Pattern shellackers.	Tool-crib tenders.
Errand boys.	Pattern storemen.	Truckers (electric).
Expeditors.	Pipe cutters.	Weighmen.
Greasers.	Power-saw men.	Water testers.
Hookers-on.	Rivet buckers.	Working foremen (un- skilled).
	Rivet heaters.	

LIST OF BULLETINS OF THE BUREAU OF LABOR STATISTICS

The following is a list of all bulletins of the Bureau of Labor Statistics published since July, 1912, except that in the case of bulletins giving the results of periodic surveys of the bureau only the latest bulletin on any one subject is here listed.

A complete list of the reports and bulletins issued prior to July, 1912, as well as the bulletins published since that date, will be furnished on application. Bulletins marked thus () are out of print.*

Conciliation and Arbitration (including strikes and lockouts).

- *No. 124. Conciliation and arbitration in the building trades of Greater New York. [1913.]
- *No. 133. Report of the industrial council of the British Board of Trade on its inquiry into industrial agreements. [1913.]
- No. 139. Michigan copper district strike. [1914.]
- *No. 144. Industrial court of the cloak, suit, and skirt industry of New York City. [1914.]
- *No. 145. Conciliation, arbitration, and sanitation in the dress and waist industry of New York City. [1914.]
- *No. 191. Collective bargaining in the anthracite-coal industry. [1916.]
- *No. 198. Collective agreements in the men's clothing industry. [1916.]
- No. 233. Operation of the industrial disputes investigation act of Canada. [1918.]
- No. 255. Joint industrial councils in Great Britain. [1919.]
- No. 283. History of the Shipbuilding Labor Adjustment Board, 1917 to 1919.
- No. 287. National War Labor Board: History of its formation, activities, etc. [1921.]
- *No. 303. Use of Federal power in settlement of railway labor disputes. [1922.]
- No. 341. Trade agreement in the silk ribbon industry of New York City. [1923.]
- No. 402. Collective bargaining by actors. [1926.]
- No. 468. Trade agreements, 1927.
- No. 481. Joint industrial control in the book and job printing industry. [1928.]

Cooperation.

- No. 313. Consumers' cooperative societies in the United States in 1920.
- No. 314. Cooperative credit societies (credit unions) in America and in foreign countries. [1922.]
- No. 437. Cooperative movement in the United States in 1925 (other than agricultural).

Employment and Unemployment.

- *No. 109. Statistics of unemployment and the work of employment offices. [1913.]
- No. 172. Unemployment in New York City, N. Y. [1915.]
- *No. 183. Regularity of employment in the women's ready-to-wear garment industries. [1915.]
- *No. 195. Unemployment in the United States. [1916.]
- No. 196. Proceedings of the Employment Managers' Conference held at Minneapolis, Minn., January 19 and 20, 1916.
- *No. 202. Proceedings of the conference of Employment Managers' Association of Boston, Mass., held May 10, 1916.
- No. 206. The British system of labor exchanges. [1916.]
- *No. 227. Proceedings of the Employment Managers' Conference, Philadelphia, Pa., April 2 and 3, 1917.
- No. 235. Employment system of the Lake Carriers' Association. [1918.]
- *No. 241. Public employment offices in the United States. [1918.]
- No. 247. Proceedings of Employment Managers' Conference, Rochester, N. Y., May 9-11, 1918.
- *No. 310. Industrial unemployment: A statistical study of its extent and causes. [1922.]
- No. 409. Unemployment in Columbus, Ohio, 1921 to 1925.
- No. 520. Social and economic character of unemployment in Philadelphia, April, 1929.

Foreign Labor Laws.

- *No. 142. Administration of labor laws and factory inspection in certain European countries. [1914.]
- No. 494. Labor legislation of Uruguay. [1929.]
- No. 510. Labor legislation of the Argentine Republic. [1930.]

Housing.

- *No. 158. Government aid to home owning and housing of working people in foreign countries. [1914.]
- No. 263. Housing by employers in the United States. [1920.]
- No. 295. Building operations in representative cities in 1920.
- No. 500. Building permits in the principal cities of the United States in [1921 to] 1928.

Industrial Accidents and Hygiene.

104. Lead poisoning in potteries, tile works, and porcelain enameled sanitary ware factories. [1912.]
- ✓No. 120. Hygiene of the painters' trade. [1913.]
- *No. 127. Dangers to workers from dusts and fumes, and methods of protection. [1913.]
- *No. 141. Lead poisoning in the smelting and refining of lead. [1914.]
- *No. 157. Industrial accident statistics. [1915.]
- *No. 165. Lead poisoning in the manufacture of storage batteries. [1914.]
- *No. 179. Industrial poisons used in the rubber industry. [1915.]
- No. 188. Report of British departmental committee on the danger in the use of lead in the painting of buildings. [1916.]
- *No. 201. Report of committee on statistics and compensation insurance cost of the International Association of Industrial Accident Boards and Commissions. [1916.]
- *No. 209. Hygiene of the printing trades. [1917.]
- *No. 219. Industrial poisons used or produced in the manufacture of explosives. [1917.]
- No. 221. Hours, fatigue, and health in British munition factories. [1917.]
- No. 230. Industrial efficiency and fatigue in British munition factories. [1917.]
- *No. 231. Mortality from respiratory diseases in dusty trades (inorganic dusts). [1918.]
- *No. 234. Safety movement in the iron and steel industry, 1907 to 1917.
- No. 236. Effects of the air hammer on the hands of stonecutters. [1918.]
- No. 249. Industrial health and efficiency. Final report of British Health of Munition Workers' Committee. [1919.]
- No. 251. Preventable death in the cotton-manufacturing industry. [1919.]
- No. 256. Accidents and accident prevention in machine building. [1919.]
- No. 267. Anthrax as an occupational disease. [1920.]
- No. 276. Standardization of industrial accident statistics. [1920.]
- No. 280. Industrial poisoning in making coal-tar dyes and dye intermediates. [1921.]
- *No. 291. Carbon-monoxide poisoning. [1921.]
- No. 293. The problem of dust phthisis in the granite-stone industry. [1922.]
- No. 298. Causes and prevention of accidents in the iron and steel industry, 1910-1919.
- No. 306. Occupational hazards and diagnostic signs: A guide to impairments to be looked for in hazardous occupations. [1922.]
- No. 392. Survey of hygienic conditions in the printing trades. [1925.]
- No. 405. Phosphorus necrosis in the manufacture of fireworks and in the preparation of phosphorus [1926.]
- No. 427. Health survey of the printing trades, 1922 to 1925.
- No. 428. Proceedings of the Industrial Accident Prevention Conference, held at Washington, D. C., July 14-16, 1926.
- No. 460. A new test for industrial lead poisoning. [1928.]
- No. 466. Settlement for accidents to American seamen. [1928.]
- No. 488. Deaths from lead poisoning, 1925-1927.
- No. 490. Statistics of industrial accidents in the United States to the end of 1927.
- No. 507. Causes of death, by occupation. [1929.]

Industrial Relations and Labor Conditions.

- No. 237. Industrial unrest in Great Britain. [1917.]
- No. 340. Chinese migrations, with special reference to labor conditions. [1923.]
- No. 349. Industrial relations in the West Coast lumber industry. [1923.]
- No. 361. Labor relations in the Fairmont (W. Va.) bituminous-coal field. [1924.]
- No. 380. Postwar labor conditions in Germany. [1925.]
- No. 383. Works council movement in Germany. [1925.]
- No. 384. Labor conditions in the shoe industry in Massachusetts, 1920-1924.
- No. 399. Labor relations in the lace and lace-curtain industries in the United States. [1925.]
- Labor Laws of the United States (including decisions of courts relating to labor).**
- No. 211. Labor laws and their administration in the Pacific States. [1917.]
- No. 229. Wage-payment legislation in the United States. [1917.]
- No. 285. Minimum-wage laws of the United States: Construction and operation. [1921.]
- No. 321. Labor laws that have been declared unconstitutional. [1922.]
- No. 322. Kansas Court of Industrial Relations. [1923.]
- No. 343. Laws providing for bureaus of labor statistics, etc. [1923.]
- No. 370. Labor laws of the United States, with decisions of courts relating thereto. [1925.]
- No. 408. Laws relating to payment of wages. [1926.]
- No. 486. Labor legislation of 1928.
- No. 517. Decisions of courts and opinions affecting labor, 1927-1928.

Proceedings of Annual Conventions of the Association of Governmental Labor Officials of the States and Canada. (Name changed in 1928 to Association of Governmental Officials in Industry of the United States and Canada.)

- No. 266. Seventh, Seattle, Wash., July 12-15, 1920.
- No. 307. Eighth, New Orleans, La., May 2-6, 1921.
- No. 323. Ninth, Harrisburg, Pa., May 22-26, 1922.
- *No. 352. Tenth, Richmond, Va., May 1-4, 1923.
- *No. 389. Eleventh, Chicago, Ill., May 19-23, 1924.
- *No. 411. Twelfth, Salt Lake City, Utah, August 13-15, 1925.
- No. 429. Thirteenth, Columbus, Ohio, June 7-10, 1926.
- *No. 455. Fourteenth, Paterson, N. J., May 31 to June 3, 1927.
- No. 480. Fifteenth, New Orleans, La., May 21-24, 1928.
- No. 508. Sixteenth, Toronto, Canada, June 4-7, 1929.

Proceedings of Annual Meetings of the International Association of Industrial Accident Boards and Commissions.

- No. 210. Third, Columbus, Ohio, April 25-28, 1916.
- No. 248. Fourth, Boston, Mass., August 21-25, 1917.
- No. 264. Fifth, Madison, Wis., September 24-27, 1918.
- *No. 273. Sixth, Toronto, Canada, September 23-26, 1919.
- No. 281. Seventh, San Francisco, Calif., September 20-24, 1920.
- No. 304. Eighth, Chicago, Ill., September 19-23, 1921.
- No. 333. Ninth, Baltimore, Md., October 9-13, 1922.
- *No. 359. Tenth, St. Paul, Minn., September 24-26, 1923.
- No. 385. Eleventh, Halifax, Nova Scotia, August 26-28, 1924.
- No. 395. Index to proceedings, 1914-1924.
- No. 406. Twelfth, Salt Lake City, Utah, August 17-20, 1925.
- No. 432. Thirteenth, Hartford, Conn., September 14-17, 1926.
- *No. 456. Fourteenth, Atlanta, Ga., September 27-29, 1927.
- No. 485. Fifteenth, Paterson, N. J., September 11-14, 1928.
- No. 511. Sixteenth, Buffalo, N. Y., October 8-11, 1929.

Proceedings of Annual Meetings of the International Association of Public Employment Services.

- No. 192. First, Chicago, December 19 and 20, 1913; second, Indianapolis, September 24 and 25, 1914; third, Detroit, July 1 and 2, 1915.
- No. 220. Fourth, Buffalo, N. Y., July 20 and 21, 1916.
- No. 311. Ninth, Buffalo, N. Y., September 7-9, 1921.
- No. 337. Tenth, Washington, D. C., September 11-13, 1922.
- No. 355. Eleventh, Toronto, Canada, September 4-7, 1923.
- No. 400. Twelfth, Chicago, Ill., May 19-23, 1924.
- No. 414. Thirteenth, Rochester, N. Y., September 15-17, 1925.
- No. 478. Fifteenth, Detroit, Mich., October 25-28, 1927.
 - 1. Sixteenth, Cleveland, Ohio, September 18-21, 1928.

Labor.

- Activity costs in the common-brick industry. [1924.]
- Labor costs in manufacturing 100 pairs of shoes, 1923.
- Cost of production and wages and hours of labor in the paper box-board industry. [1926.]
- Hours, and productivity in the pottery industry, 1925.
- Productivity of labor in the glass industry. [1927.]
- Productivity of labor in merchant blast furnaces. [1928.]
- Productivity of labor in newspaper printing. [1929.]

Cost of Living.

- Cost of living, from refiner to consumer. [1913.]
- Cost of living, flour prices, from farmer to consumer. [1913.]
- Cost of living, from producer to consumer. [1914.]
- Cost of living, prices as affected by the war. [1915.]
- Cost of living, in the United States. [1924.]
- Cost of living, in living figures in wage adjustments. [1924/25 to 1928.]

- Cost of living, in other work places.
- Cost of living, of industrial workers in foundries.
- Cost of living, in headlighting devices for motor vehicles.
- Cost of living, in operation, care, and use of ladders.
- Cost of living, in machinery and operations.
- Cost of living, in working plants.
- Cost of living, in school buildings.

Safety Codes—Continued.

- No. 410. Safety code for paper and pulp mills.
- No. 430. Safety code for power presses and foot and hand presses.
- No. 433. Safety codes for the prevention of dust explosions.
- No. 436. Safety code for the use, care, and protection of abrasive wheels.
- No. 447. Safety code for rubber mills and calenders.
- No. 451. Safety code for forging and hot-metal stamping.
- No. 463. Safety code for mechanical power-transmission apparatus—first revision.
- No. 509. Textile safety code.
- No. 512. Code for identification of gas mask canisters
- No. 519. Safety code for woodworking plants, as revised, 1930.

Vocational and Workers, Education.

- *No. 159. Short-unit courses for wage earners, and a factory school experiment. [1915.]
- *No. 162. Vocational-education survey of Richmond, Va. [1915.]
- *No. 199. Vocational-education survey of Minneapolis, Minn. [1917.]
- No. 271. Adult working-class education in Great Britain and the United States. [1920.]
- No. 459. Apprenticeship in building construction. [1923.]

Wages and Hours of Labor.

- *No. 146. Wages and regularity of employment and standardization of piece rates in the dress and waist industry of New York City. [1914.]
- *No. 147. Wages and regularity of employment in the cloak, suit, and skirt industry. [1914.]
- No. 161. Wages and hours of labor in the clothing and cigar industries, 1911 to 1913.
- No. 163. Wages and hours of labor in the building and repairing of steam railroad cars, 1907 to 1913.
- *No. 190. Wages and hours of labor in the cotton, woolen, and silk industries, 1907 to 1914.
- No. 204. Street-railway employment in the United States. [1917.]
- No. 225. Wages and hours of labor in the lumber, millwork, and furniture industries, 1915.
- No. 265. Industrial survey in selected industries in the United States, 1919.
- No. 297. Wages and hours of labor in the petroleum industry, 1920.
- No. 356. Productivity costs in the common-brick industry. [1924.]
- No. 358. Wages and hours of labor in the automobile-tire industry, 1923.
- No. 360. Time and labor costs in manufacturing 100 pairs of shoes, 1923.
- No. 365. Wages and hours of labor in the paper and pulp industry, 1923.
- No. 394. Wages and hours of labor in metalliferous mines, 1924.
- No. 407. Labor cost of production and wages and hours of labor in the paper box-board industry. [1925]
- No. 412. Wages, hours, and productivity in the pottery industry, 1925.
- No. 416. Hours and earnings in anthracite and bituminous coal mining, 1922 and 1924.
- No. 472. Wages and hours of labor in the slaughtering and meat packing industry, 1927.
- No. 476. Union scales of wages and hours of labor, 1927. [Supplement to Bul. No. 457.]
- No. 484. Wages and hours of labor of common street laborers, 1928.
- No. 487. Wages and hours of labor in woolen and worsted goods manufacturing, 1910 to 1928.
- No. 492. Wages and hours of labor in cotton-goods manufacturing, 1910 to 1928.
- No. 497. Wages and hours of labor in the lumber industry in the United States, 1928
- No. 498. Wages and hours of labor in the boot and shoe industry, 1910 to 1928.
- No. 499. History of wages in the United States from colonial times to 1928.
- No. 502. Wages and hours of labor in the motor-vehicle industry, 1928.
- No. 503. Wages and hours of labor in the men's clothing industry, 1911 to 1928.
- No. 504. Wages and hours of labor in the hosiery and underwear industries, 1907 to 1928.
- No. 513. Wages and hours of labor in the iron and steel industry, 1929.
- No. 514. Pennsylvania Railroad wage data. From Report of Joint Factories and
wage negotiations in 1928.
- No. 515. Union scales of wages, May 15, 1929.
- No. 516. Hours and earnings in bituminous coal mining, 1929.
- No. 522. Wages and hours of labor in foundries and machine shops.

Welfare Work.

- *No. 123. Employers' welfare work. [1913.]
- No. 222. Welfare work in British munitions
- *No. 250. Welfare work for employees in industry
- No. 458. Health and recreation activities

Wholesale Prices.

- No. 284. Index numbers of wholesale
- No. 453. Revised index numbers of
- No. 493. Wholesale prices, 1913 to 19
- No. 521. Wholesale prices, 1929.