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## APPENDIX C

### TABLES ON ENGINEERING ENROLLMENTS AND DEGREES

IN THIS appendix we present various tables on the number and the distribution among the several specialties of enrollments and degrees in engineering. There is no single comprehensive source of such information for the period in which we are interested. We are forced, therefore, to use a number of different sources for varying overlapping periods. The data are here presented together to provide the reader with as complete a view of historic trends in engineering education as the scattered information permits.

TABLE C-1

Enrollments in Engineering Courses in Universities, Colleges, and  
Technological Schools, 1904-1915

<i>Academic Year Ending June</i>	<i>Civil</i>	<i>Chemical</i>	<i>Electrical</i>	<i>Mechanical</i>	<i>Mining</i>	<i>Other</i>	<i>Total</i> <sup>a</sup>
1904	4,431	499	2,662	3,778	1,465	17	12,852
1905	7,356	759	5,204	6,654	2,547	2,065	24,585
1906	7,962	1,234	5,696	7,426	2,826	4,231	29,375
1909	9,649	1,117	7,154	6,142	3,150	n.a.	27,212
1910	7,889	869	5,450	6,377	2,656	n.a.	23,241
1911	8,939	1,452	6,128	7,052	2,337	n.a.	25,908
1915	7,182	2,383	6,637	7,751	1,922	7,185	33,060
<i>Percentage Distribution</i>							
1904	34.5	3.9	20.7	29.4	11.4	0.1	100.0
1905	29.9	3.1	21.2	27.0	10.4	8.4	100.0
1906	27.1	4.2	19.4	25.3	9.6	14.4	100.0
1909	35.5	4.1	26.3	22.5	11.6	n.a.	100.0
1910	34.0	3.7	23.5	27.4	11.4	n.a.	100.0
1911	34.5	5.6	23.7	27.2	9.0	n.a.	100.0
1915	21.7	7.2	20.2	23.4	5.8	21.7	100.0

<sup>a</sup> The total number enrolled in engineering was not given in the source; it was obtained for each year by adding the numbers reported in the specified fields.

Source: *Annual Report of the Commissioner of Education, 1903-1904*, and *1915-1916*, Office of Education.

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TABLE C-2

Total Enrollments of Students in Engineering in the United States, 1920-1953

Academic Year Ending June	TOTAL ENROLLMENTS		UNDERGRADUATE ENROLLMENTS		GRADUATE ENROLLMENTS	
	Office of Education (1)	Journal of Engineering Education (2)	Office of Education (3)	Journal of Engineering Education (4)	Office of Education (5)	Journal of Engineering Education (6)
1920	51,908	57,017	51,908	...	...	...
1922	56,649	...	56,649	56,649	...	368
1924	57,690	...	57,690	...	...	...
1926	59,315	57,313	59,315	56,299	...	1,014
1927	...	60,899	...	59,133	...	1,766
1928	66,637	64,692	66,637	63,023	...	1,669
1930	74,000	...	74,000	...	...	...
1931	...	76,325	...	73,386	...	2,939
1932	77,041	...	73,766	...	3,275	...
1933	...	67,046	...	63,119	...	3,927
1934	65,406	...	62,600	...	2,805	2,756
1936	74,752	66,541	71,827	64,137	2,933 <sup>a</sup>	2,404
1937	...	69,976	...	67,515	...	2,461
1938	92,724	87,943	89,440	84,547	3,284	3,396
1939	...	87,760	...	82,585	...	5,175
1940	107,918	108,426	103,270	102,879	4,648	5,547
1941	...	114,116	...	108,911	...	5,205
1942	119,339	112,709	115,018	108,091	4,321	4,618
1943	...	124,647	...	121,541	...	3,106
1944	112,749	48,061	109,138	45,404	3,611	2,657
1945	...	38,017	...	34,892	...	3,126
1946	...	67,045	...	63,064	...	4,010 <sup>a</sup>
1947	...	211,782	...	197,797	...	13,985
1948	250,009	244,390	236,370	230,180	13,639	14,210
1949	...	241,549	...	225,655	...	15,432 <sup>a</sup>
1950	228,914	219,712	210,806	201,927	18,108	17,785
1951	...	180,262	...	161,592	...	18,670
1952	176,549	165,637	156,080	145,997	20,469	19,640
1953	...	176,549	...	156,080	...	20,469

... = not available.

<sup>a</sup> The figures for undergraduate and graduate enrollments in the sources do not total to the figures for total enrollments.

Column

Source

1, 3, 5 *Biennial Surveys of Education*, Office of Education, 1920-1950; "Engineering Enrollments and Degrees," processed, Office of Education, Circular 364, January 21, 1953.

Total enrollment figures for the years 1920-1936 were derived by summing the numbers enrolled in specified fields, as reported in the Biennial Surveys. For the years

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Column

Source

1938-1952 the source gives total enrollment data and it is this total which is shown in the table for each of these years.

The classification of schools for which engineering enrollments were reported by the Office of Education has varied over the years as follows:

1920-1930: Students in engineering courses in universities, colleges, and professional schools.

1932-1938: Students enrolled in professional schools, both independent and university schools.

1940-1944: Resident student enrollment in professional schools.

1948: Students in professional school of engineering.

1952: Engineering students enrolled in U.S. schools.

2, 4, 6 *Journal of Engineering Education*, annual statistics on engineering enrollments and graduates, November 1932 to February 1954.

For the years 1942 through 1953 enrollments were reported as of October or November of the preceding year.

Beginning with the year 1950, the *Journal of Engineering Education* presented separate data on enrollments in ECPD accredited schools as follows:

*Total Enrollments*: 1950, 198,266; 1951, 161,324; 1952, 147,694; 1953, 158,518.

*Undergraduate Enrollments*: 1950, 180,646; 1951, 142,954; 1952, 128,367; 1953, 138,170.

TABLE C-3

Undergraduate Enrollments in Engineering Schools, in the  
United States, by Class, 1926-1953

<i>Academic Year Ending June</i>	<i>Number of Institutions</i>	<i>Freshmen</i>	<i>Sophomores</i>	<i>Juniors</i>	<i>Seniors</i>	<i>5 year Course</i>
1926	143	20,063	14,493	10,695	9,063	...
1927	148	22,765	16,123	11,562	9,403	...
1928	148	23,360	16,905	12,685	10,073	...
1931	145	25,332	19,631	16,262	12,161	...
1933	143	17,441	17,028	15,542	13,108	...
1935	68	13,275	9,452	8,868	7,923	...
1936	124	20,128	14,821	12,031	10,436	363
1937	115	23,058	15,842	12,528	9,671	379
1938	126	27,532	20,326	15,536	11,824	625
1939	122	25,444	19,988	16,701	12,420	508
1940	146	30,787	23,378	18,936	16,235	845
1941	149	33,175	29,242	20,120	16,310	985
1942	...	34,993	24,349	19,009	16,291	1,311
1943	166	50,263	27,912	21,164	17,341	1,105
1944	143	16,609	7,985	6,334	7,737	329
1945	...	17,823	5,203	3,213	2,373	143
1946	...	32,455	11,248	6,648	4,081	106
1947	130	80,703	50,406	30,615	20,740	705
1948	143	57,507	71,615	48,227	32,369	1,846
1949	145	47,672	52,949	59,945	45,695	1,924

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TABLE C-3 (continued)

Academic Year Ending June	Number of Institutions	Freshmen	Sophomores	Juniors	Seniors	5 year Course
1950	...	41,077	39,558	46,077	55,698	2,664
1951	...	34,299	30,915	34,423	41,702	3,514
1952	...	39,571	26,741	27,545	30,722	3,214
1953	...	51,631	30,219	25,011	25,964	3,065

... = not available.

Source: *Journal of Engineering Education*, annual statistics on engineering enrollments, various issues November 1932 to February 1954. For the years 1942 through 1953 enrollments are as of October or November of the preceding year.

TABLE C-4  
Male Enrollments in Engineering as Per Cent of Total Enrollments,  
1934-1952

Academic Year Ending June	Office of Education (1)	Journal of Engineering Education (2)
1934	99.98	...
1936	99.73	...
1938	99.51	...
1940	99.61	...
1942	99.59	...
1944	98.46	...
1945	...	96.35
1946	...	97.31
1947	...	99.87
1948	99.41	...
1949	...	99.47
1950	99.60	99.65
1951	...	99.62
1952	99.61	99.79

... = not available.

Source: Same as in Table C-2.

TABLE C-5  
Total U.S. Enrollments in Engineering, by Field, 1920-1953, Percentage Distribution

Academic Year Ending June	OFFICE OF EDUCATION <sup>a</sup>					JOURNAL OF ENGINEERING EDUCATION <sup>b</sup>								
	Civil	Mechanical	Electrical	Chemical	Mining	Other	Total	Civil	Mechanical	Electrical	Chemical	Mining	Other	Total
1920	17.1	22.7	18.2	11.1	5.9	25.0	100.0	22.7	25.4	23.5	12.5	5.1	10.8	100.0
1922	17.1	21.5	21.8	9.5	5.7	24.4	100.0	21.5	18.3	31.4	8.4	3.5	16.8	100.0
1924	17.4	18.4	24.3	7.2	4.8	27.9	100.0	21.5	16.6	33.0	9.4	3.2	15.6	100.0
1926	18.3	16.4	26.4	7.1	2.8	29.0	100.0	21.6	17.3	31.0	9.2	3.2	17.7	100.0
1927														
1928	17.3	15.7	23.7	7.4	2.3	33.6	100.0	18.5	20.2	25.4	12.5	3.8	19.6	100.0
1930	15.6	15.7	21.1	6.0	1.9	39.7	100.0	21.1	23.4	22.9	14.7	3.7	14.2	100.0
1931								13.3	19.4	17.6	15.0	2.3	32.4	100.0
1932	14.8	18.1	20.2	12.0	3.3	31.6	100.0	10.2	25.5	14.3	15.0	2.0	33.0	100.0
1933								9.9	24.8	13.3	15.4	1.3	35.3	100.0
1934	13.3	18.2	18.2	11.5	2.6	36.2	100.0	9.9	25.6	13.9	15.2	1.2	34.2	100.0
1936	11.7	18.7	15.8	14.4	3.3	36.1	100.0	9.9	22.4	15.6	17.0	0.9	34.2	100.0
1937								9.9	18.5	16.5	10.6	0.7	43.8	100.0
1938														
1939														
1940														
1941														
1942														
1943														
1944														
1945														
1946														

TABLE C-5 (continued)

Academic Year Ending June	OFFICE OF EDUCATION <sup>a</sup>					JOURNAL OF ENGINEERING EDUCATION <sup>b</sup>							
	Civil	Mechanical	Electrical	Chemical	Mining	Other	Total	Civil	Mechanical	Electrical	Chemical	Mining	Other
1947							14.2	21.0	18.4	8.4	0.9	37.1	100.0
1948							12.6	22.4	22.4	10.8	1.0	30.8	100.0
1949							13.9	22.1	22.2	9.7	0.9	31.2	100.0
1950							14.7	23.0	23.1	10.1	1.0	28.1	100.0
1951							15.2	21.9	21.2	10.1	1.0	30.6	100.0
1952	13.9	20.6	20.2	8.8	0.7	35.8	100.0						
1953							14.1	20.7	20.7	9.5	0.9	33.9	100.0

<sup>a</sup> *Biennial Survey of Education*, Office of Education, 1920-1936; "Engineering Enrollments and Degrees, 1952," processed, Office of Education, Circular 364, January 21, 1953. The Office of Education did not publish data on engineering enrollments by field for the years 1938-1950.

<sup>b</sup> *Journal of Engineering*, annual statistics on enrollment, November 1932 to February 1954.

Note: For the years 1942 through 1953 enrollments were reported as of October or November of the preceding year. The figure for the year 1945 does not include graduate enrollments. The figures for the years 1939 through 1949, with the exception of 1943, and undergraduate enrollments in 1947, include enrollments in Canadian schools. For the years 1950-1954 enrollments are reported for ECPD accredited schools only.

TABLE C-6  
Total Degrees Awarded in Engineering in the United States, 1920-1953

Academic Year Ending June	GRADUATE DEGREES									
	FIRST DEGREES					GRADUATE DEGREES				
	(Baccalaureate and First Professional Degrees)					Total Graduate Degrees				
	Office of Education (1)	Bureau of Labor Statistics (2)	Journal of Engineering Education (3)	Office of Education (4)	Journal of Engineering Education (5)	Office of Education (6)	Journal of Engineering Education (7)	Office of Education (8)	Journal of Engineering Education (9)	National Science Foundation (10)
1920	4,400	5,000	...	207	...	206	...	1	...	5
1921	...	6,100	...	...	...	...	...	...	...	1
1922	6,823	7,500	...	350	...	348	...	2	...	4
1923	...	7,700	...	...	...	...	...	...	...	5
1924	7,470	8,000	...	315	...	315	...	...	...	5
1925	...	7,800	...	...	...	...	...	...	...	2
1926	7,389	7,600	...	632	...	631	...	1	...	11
1927	...	7,800	...	...	...	...	...	...	...	10
1928	7,633	7,900	...	785	...	771	...	14	...	28
1929	...	7,800	...	...	...	...	...	...	...	34
1930	7,395	7,700	...	813	...	811	...	2	...	49
1931	...	9,200	...	...	...	...	...	...	...	25
1932	10,374	10,700	...	1,630	...	1,514	...	116	...	47
1933	...	11,300	...	...	...	...	...	...	...	75
1934	11,419	12,000	...	1,394	...	1,259	...	135	...	97
1935	...	11,600	...	...	...	...	...	...	...	63
1936	10,629	11,200	8,847	1,280	817	1,169	735	111	82	48
1937	...	11,400	7,881	...	1,184	...	1,058	...	126	70
1938	11,039	11,600	8,245	1,261	1,248	1,117	1,156	144	92	59
1939	...	13,300	8,697	...	1,316	...	1,219	...	97	44



TABLE C-6 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1940	14,348	15,100	12,408	1,460	1,426	1,336	1,318	124	108	77
1941	...	15,200	11,358	...	1,532	...	1,358	...	174	76
1942	15,519	16,000	12,709	1,172	...	1,043	...	129	...	47
1943	...	15,300	...	...	721	...	637	...	84	22
1944	12,785	13,500	14,145	762	623	681	529	81	94	30
1945	...	8,500	4,190	...	519	...	450	...	69	37
1946	...	11,500	7,881	...	1,072	...	988	...	84	89
1947	...	21,000	18,592	...	3,217	...	3,090	...	127	94
1948	31,096	32,000	27,391	...	4,555	...	4,303	...	252	257
1949	...	44,000	41,793	5,007	5,200	4,647	4,783	360	417	360
1950	52,246	47,000	48,160	4,913	5,357	4,496	4,865	417	492	417
1951	...	36,000	37,887	...	5,720	...	5,134	...	586	520
1952	30,286	29,000	27,051	4,727	4,718	4,141	4,132	586	586	529
1953	...	...	21,556	...	4,318	...	3,726	...	592	518

Column

Source

1, 4, 6, *Biennial Surveys of Education*, Office of Education, 1920-1942, "Earned Degrees Conferred by Higher Educational Institutions, 1949-1950," processed, Office of Education, Circular 282, December 1950.

8 "Engineering Enrollments and Degrees, 1952," processed, Office of Education, Circular 364, January 21, 1953.

For the years 1920-1936 figures on degrees awarded were obtained by totalling the number of degrees reported by specified fields for each of these years in the biennial surveys.

The classification of schools for the period covered changed as indicated in note to Table C-2.

Separate data for engineering degrees conferred by arts and science schools were reported in the biennial surveys of 1934-1944. However, the surveys of 1940 and 1942 did not include the number of such degrees in their total figures of engineering degrees awarded for those years. They are included in this table.

2 *Employment Outlook for Engineers*, Bureau of Labor Statistics, Bull. 968, 1949, Appendix D, Table D-3.

Estimates for years 1920-1949 are based on an adjustment for schools not reporting each year. Figures for years 1950-1952 are forecasts of BLS based on enrollments for the academic year 1948-1949 published in the *Journal of Engineering Education*, February 1949.

3, 5, 7, *Journal of Engineering Education*, annual statistics on engineering enrollments and graduates, December 1935 to February 1954.

9 For the years 1949-1954 the number of engineering degrees were reported for ECPD accredited schools only.

10 "Scientific Personnel Resources," processed, National Science Foundation, May 1954, Table No. IV-76.

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TABLE C-7

First Degrees in Engineering, by Field, 1920-1952, Percentage Distribution

<i>Academic Year End- ing June</i>	<i>Civil</i>	<i>Mechanical</i>	<i>Electrical</i>	<i>Chemical</i>	<i>Mining</i>	<i>General</i>	<i>Other</i>	<i>Total</i>
<i>Office of Education<sup>a</sup></i>								
1920	24.8	28.1	21.2	16.6	6.2	3.1	...	100.0
1922	23.7	24.5	21.8	14.8	6.8	8.4	...	100.0
1924	23.4	27.5	27.4	11.2	6.7	3.8	...	100.0
1926	25.3	24.5	30.4	10.0	5.5	4.3	...	100.0
1928	24.6	21.2	33.6	9.2	3.7	7.7	...	100.0
1930	26.7	22.6	32.8	11.1	3.2	3.6	...	100.0
1932	20.2	20.1	23.9	11.1	4.4	...	20.3	100.0
1934	19.0	22.9	23.9	12.7	2.8	...	18.7	100.0
1936	18.2	22.9	20.5	16.1	3.5	...	18.8	100.0
1950	14.9	27.6	25.4	8.6	...	...	23.5	100.0
1952	17.7	25.1	21.0	9.4	1.4	...	25.4	100.0
<i>Journal of Engineering Education<sup>b</sup></i>								
1935	18.0	22.2	23.6	14.6	3.4	...	18.2	100.0
1938	17.5	21.4	19.6	17.6	2.5	...	21.4	100.0
1941	10.9	27.5	18.8	18.2	2.4	...	22.2	100.0
1942								
1943	12.0	29.6	16.4	18.4	1.9	...	21.7	100.0
1944	13.3	30.2	18.4	20.3	1.4	...	16.4	100.0
1945	13.6	29.0	18.1	16.3	1.3	...	21.7	100.0
1946	15.2	24.6	18.4	17.4	0.8	...	23.6	100.0
1947	13.4	30.3	19.0	13.3	1.2	...	22.8	100.0
1948	11.1	27.8	22.0	11.3	1.0	...	26.8	100.0
1949	14.6	27.8	24.7	9.9	0.9	...	22.1	100.0
1950	15.2	27.1	27.7	9.2	0.9	...	19.9	100.0
1951	17.1	25.4	22.7	9.5	1.2	...	24.1	100.0
1952	18.1	25.1	21.6	10.1	1.4	...	23.7	100.0

<sup>a</sup> *Biennial Surveys of Education*, Office of Education, 1920-1936; "Earned Degrees Conferred by Higher Educational Institutions, 1949-1950," processed, Office of Education, Circular 282, December 1950, "Engineering Enrollments and Degrees, 1952," processed, Office of Education, Circular 364, January 21, 1953.

<sup>b</sup> *Journal of Engineering Education*, annual statistics on engineering enrollments and graduates, December 1935 to February 1953. The years 1941, 1942, and 1944-1947 include schools in Canada; the data for years 1949-1953 are limited to ECPD accredited schools only.

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TABLE C-8

Graduate Degrees in Engineering by Field, 1920-1952,  
Percentage Distribution

<i>Academic Year End- ing June</i>	<i>Civil</i>	<i>Mechanical</i>	<i>Electrical</i>	<i>Chemical</i>	<i>Mining</i>	<i>Other</i>	<i>Total</i>
	<i>Office of Education</i>						
1920	32.9	18.8	15.9	6.3	2.9	23.2	100.0
1922	23.1	19.7	16.3	9.2	5.7	26.0	100.0
1924	17.1	19.1	15.2	5.4	8.3	34.9	100.0
1926	17.8	10.0	13.0	2.4	1.6	55.2	100.0
1928	13.6	9.7	8.7	3.1	2.5	62.4	100.0
1930	12.7	8.7	9.1	2.3	2.7	64.5	100.0
1932	20.3	14.8	21.5	14.8	5.0	23.6	100.0
1934	14.7	17.5	20.2	13.8	3.1	30.7	100.0
1936	17.5	14.6	17.8	18.4	3.2	28.5	100.0
1950	14.6	16.9	23.1	17.8	n.a.	27.6	100.0
	<i>Journal of Engineering Education</i>						
1940	21.5	12.3	16.3	25.0	2.2	22.7	100.0
1941	17.1	12.1	15.0	29.6	1.5	24.7	100.0
1942							
1943	15.6	16.4	10.5	25.8	1.8	29.9	100.0
1944							
1945	11.1	16.5	14.1	24.0	1.5	32.8	100.0
1946	13.0	16.1	17.4	21.1	2.9	29.5	100.0
1947	20.8	15.9	17.7	21.7	1.4	22.5	100.0
1948	20.6	14.9	19.6	19.6	0.9	24.4	100.0
1950	14.0	16.3	23.3	16.6	0.7	29.1	100.0
1951	12.7	18.2	22.6	16.0	0.8	29.7	100.0
1952	13.3	15.1	24.1	14.8	0.7	31.9	100.0

Source: Same as in Table C-7.