DOCUMENT RESUME

ED 058 050 SE 013 119

TITLE	Engineering Employment and Unemployment Data, 1971. Original Data from the 1971 National Survey of Engineering Employment.
INSTITUTION	Engineers Joint Council, New York, N.Y. Engineering Manpower Commission.
PUB DATE	Nov 71
NOTE	49p.
AVAILABLE FROM	Engineers Joint Council, 345 East 47 Street, New York, New York 10017 ($5.00)
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Employment Statistics; *Employment Trends; *Engineers; *Occupational Surveys; Questionnaires; *Surveys; Unemployment
IDENTIFIERS	Engineering Manpower Commission; Engineers Joint Council

ABSTRACT

Reported are the results of a survey of 98,000 engineers taken to be representative of approximately 500,000 members of engineering societies. Data analysis was done on 59,200 usable questionnaires. The list is believed to have included about 40 percent of the engineers in the nation. A facsimile questionnaire is reproduced at the end of the report. Included in the data are highest degree, age, employment status, curriculum of highest degree, sex, citizenship, degree year of first degree, type of employer, field of specialization, product or service area, area of technology, job function, and geographic location. The data are reported, where appropriate, for 1970 and 1971. This survey was conducted for the National Science Foundation. (TS)

Original Data from the 1971 National Survey

Conducted by

ENGINEERS JOINT CO

for the

NATIONAL SCIENCE FOU

Published by

ENGINEERING MANPOWER

of ENGINEERS JOINT

345 East 47th Stree

New York, New York 1

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ENGINEERING EMPLOYMENT AND UNEMPLOYMENT DATA, 1971

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November 1971

Price $5.00

INTRODUCTION

The National Survey of Engineering Employment

As the economic situation worsened during 1970 and 1971 and overall unemployment rates climbed, Engineers Joint Council urged the government to undertake a comprehensive survey in order to provide reliable statistics on the extent and nature of the employment problem. In May 1971 the National Science Foundation launched a survey of some 300,000 scientists and commissioned EJC to put together a special mailing list consisting of the combined and unduplicated membership rolls of twenty-three engineering societies that were broadly representative of all major disciplines and specialties in the United States. The societies included are listed on page 7 of this report. From this list, which included approximately 500,000 names and addresses, a sample consisting of every fifth name was drawn. Questionnaires were mailed to the resulting set of 98,000 individuals. By early August a response rate of 65 percent had been obtained and 59,200 usable questionnaires were prepared for computer analysis.

It should be noted that the survey was intended to be representative of engineering society members but not necessarily the total U.S. engineering population. The mailing list is believed to have included about 40 percent of the engineers in the nation. In view of the membership standards of the professional societies, the survey respondents constitute a better qualified, more experienced, and more professionally oriented group than engineers as a whole.

Those engineers who do not hold membership in a national professional engineering society are outside the scope of this survey. Since a selected portion of the total engineering population was sampled, the absolute numbers for any variable should not be considered as national totals. The percentage relationships developed in the survey, however, are considered to be representative for the members of engineering societies. The procedures used do not permit estimation of population totals in terms of the individual variables.

The survey is subject to sampling errors, response errors, nonresponse bias, and bias inherent in the mail list from which the sample was drawn. With respect to sampling errors alone, the error range depends upon both the size of the cell examined and the percentage of cases within

the cell with a particular characteristic. For example, the unemployment rate for all respondents, 3.0 percent, has a sampling error range of ± 0.1 percent at the 90-percent confidence level. A cell with about 1,400 responses and an unemployment rate of 2.9 percent has a sampling error range of ± 0.7 percent at the 90-percent confidence level. Biases introduced by response errors and nonresponse have not been measured, but respondents show characteristics similar to those reported in a 1969 survey using an Engineers Joint Council mailing list closely resembling the one used for this survey.

A summary of the statistical findings of the engineers' employment survey was published on September 23, 1971 by the National Science Foundation in Science Resources Studies Highlights, "Unemployment Rate for Engineers, June-July 1971," NSF 71-33. A similar survey of scientists was conducted and preliminary results published in Science Resources Studies Highlights, "Unemployment Rates for Scientists, Spring, 1971," NSF 71-26, dated July 2, 1971.

A full report containing more detailed data on the respondents to these employment surveys will be available at a later date from the Superintendent of Documents, U.S. Government Printing Office.

Instructions for the Use of the Data Tables in This Report

The tables in this report give the numbers of survey respondents according to characteristics set forth in the questionnaires. For details regarding the wording of specific questions, refer to the facsimile questionnaire reproduced at the end of this report. The data are presented in the form of a "total" column and seven "populations" whose composition is described below. Roman numerals I to XXXI identify the characteristics analyzed, with the exception that table XXIV, which gave the SMSA (Standard Metropolitan Statistical Area as delineated by the U.S. Department of Labor) of respondents' employment in March 1970 has been omitted to save space.

The seven "populations" included in this report were selected as the most generally useful of those produced by the National Science Foundation and are defined as follows:

Population W - Engineering related employed
Population X - Nonengineering related employed
Population P - Full-time employed, engineering related

Population N - Part-time employed, engineering related, indicating "YES" to seeking full-time employment

Population S - Full-time employed, nonengineering related, and checked item 7 in question 11b of survey form (engineering related position not available.)

Population U - Part-time employed, nonengineering related, indicating "YES" to seeking full-time employment and checked item 7 in question 11b of survey form (engineering related position not available.)

Population G - Not employed and seeking employment.

The relationships that exist among the various populations can be seen in section I of the data table, "Employment Status, 1971." Other important combinations are as follows:

Populations W plus X plus G equal the "labor force" as defined by the U.S. Department of Labor.

The "Total" column minus the labor force gives the number of survey respondents who were retired, or unemployed and not seeking employment. (These populations are not shown in the data tables to save space.)

The "unemployment rate" as defined by the U.S. Department of Labor is equal to Population G divided by the labor force.

Populations N plus S plus U plus G equal the "employment problem" group as defined by Engineers Joint Council.

Population P plus the "employment problem" group constitutes the total in or seeking full-time engineering work.

The "employment problem" rate as defined by Engineers Joint Council is equal to the "employment problem" group divided by the total in or seeking full-time engineering work, or

$$\frac{N + S + U + G}{P + N + S + U + G}$$

Illustrative computations of the unemployment rate and the "employment problem" rate for the entire survey are as follows:

ENGINEERING UNEMPLOYMENT RATE AS COMPUTED BY THE NATIONAL SCIENCE FOUNDATION

Employment Status	Number	Percent
Total survey respondents	59,200	
Not employed and not seeking employment or retired	3,500	
In labor force	55,800	100.0
Employed in engineering work	50,400	90.3
Employed in non-engineering work	3,700	6.7
Unemployed and seeking employment	1,700	3.0

ENGINEERING "EMPLOYMENT PROBLEM" RATE AS COMPUTED BY ENGINEERS JOINT COUNCIL

Employment Status	Number	Percent
Total Survey respondents	59,245	
Not employed and not seeking employment or retired	3,460	
Employed in non-engineering work by choice	3,224	
Employed part-time in engineering by choice	535	
Total in or seeking full-time engineering work	52,026	100.0
Employed full-time in engineering work	49,566	95.3
Not employed full-time in engineering work	2,460	4.7
Employed part-time in engineering, seeking full-time	294	0.6
Employed in non-engineering work, engineering not available	498	0.9
Unemployed and seeking employment	1,668	3.2

Engineering Societies Included in the National Survey of Engineering Employment, 1971

American Association of Cost Engineers
American Institute of Aeronautics and Astronautics
American Institute of Chemical Engineers
American Institute of Industrial Engineers
American Institute of Mining, Metallurgical, and Petroleum Engineers
American Institute of Plant Engineers
American Society for Engineering Education
American Society for Metals
American Society for Quality Control
American Society for Testing and Materials
American Society of Agricultural Engineers
American Society of Civil Engineers
American Society of Heating, Refrigerating, and Air Conditioning Engineers
American Society of Mechanical Engineers
Institute of Electrical and Electronics Engineers
Instrument Society of America
Society for Experimental Stress Analysis
Society of American Military Engineers
Society of Automotive Engineers
Society of Fire Protection Engineers
Society of Manufacturing Engineers
Society of Naval Architects and Marine Engineers
Society of Women Engineers

1971 EMPLOYMENT SURVEY - ENGINEERS
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

	POPULA			
	TOTAL	W	X	P
ALL ENGINEERS	59,245	50,395	3,722	49,566
I. EMPLOYMENT STATUS, 1971				
PRIOR TO MARCH, 1970				
FULL-TIME EMPLOYED				
ENGINEERING RELATED	44,808	44,808	------	44,808
NONENGINEERING RELATED	2,480	------	2,480	------
PART-TIME EMPLOYED				
ENGINEERING RELATED	349	349	------	------
NONENGINEERING RELATED	57	------	57	------
AFTER MARCH, 1970				
FULL-TIME EMPLOYED				
ENGINEERING RELATED	4,758	4,758	------	4,758
NONENGINEERING RELATED	1,014	------	1,014	------
PART-TIME EMPLOYED				
ENGINEERING RELATED	480	480	------	------
NONENGINEERING RELATED	171	------	171	------
NOT EMPLOYED & SEEKING EMPLOYMENT	1,668	------	------	------
NOT EMPLOYED & NOT SEEKING EMPLOYMENT	441	------	------	------
RETIRED	3,019	------	------	------
II. HIGHEST DEGREE				
DOCTORATE	4,976	4,485	232	4,393
MASTER'S	14,004	11,996	957	11,696
BACHELOR'S	32,505	27,905	2,003	27,575
ASSOCIATE	1,592	1,311	145	1,287
NONE	5,134	4,135	328	4,066
NO REPORT	1,034	563	57	549
III. AGE				
24 AND UNDER	1,361	1,068	144	1,018
25-29	5,866	5,131	455	5,026
30-34	7,672	6,941	503	6,851
35-39	7,776	7,080	490	7,027
40-44	8,337	7,584	497	7,529
45-49	9,297	8,387	616	8,334
50-54	7,193	6,441	452	6,368
55-59	4,749	4,135	291	4,066
60-64	2,928	2,263	161	2,195
65-69	1,766	695	56	592
70 AND OVER	1,637	294	24	192
NO REPORT	663	376	33	368

1971 EMPLOYMENT SURVEY - ENGINEERS

HARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - -	59,245	50,395	3,722	49,566	294	408	90	1,668
1971								
0								
D								
ATED - - - - - - -	44,808	44,808	------	44,808	------	------	------	------
RELATED - - - - -	2,480	------	2,480	------	------	98	------	------
D								
ATED - - - - - - -	349	349	------	------	70	------	------	------
RELATED - - - - -	57	------	57	------	------	------	9	------
D								
ATED - - - - - - -	4,758	4,758	------	4,758	------	------	------	------
RELATED - - - - -	1,014	------	1,014	------	------	310	------	------
D								
ATED - - - - - - -	480	480	------	------	224	------	------	------
RELATED - - - - -	171	------	171	------	------	------	81	------
ING EMPLOYMENT - -	1,668	------	------	------	------	------	------	1,668
SEEKING EMPLOYMENT	441	------	------	------	------	------	------	------
- - - - - - - - - -	3,019	------	------	------	------	------	------	------
- - - - - - - - - -	4,976	4,485	232	4,393	45	11	2	90
- - - - - - - - - -	14,004	11,996	957	11,696	110	100	20	426
- - - - - - - - - -	32,505	27,905	2,003	27,575	109	223	58	857
- - - - - - - - - -	1,592	1,311	145	1,287	3	32	5	59
- - - - - - - - - -	5,134	4,135	328	4,066	21	39	5	214
- - - - - - - - - -	1,034	563	57	549	6	3	------	22
- - - - - - - - - -	1,361	1,068	144	1,018	9	30	11	71
- - - - - - - - - -	5,866	5,131	455	5,026	27	58	9	193
- - - - - - - - - -	7,672	6,941	503	6,851	45	54	5	168
- - - - - - - - - -	7,776	7,080	490	7,027	26	43	10	173
- - - - - - - - - -	8,337	7,584	497	7,529	37	55	12	225
- - - - - - - - - -	9,297	8,387	616	8,334	35	63	14	260
- - - - - - - - - -	7,193	6,441	452	6,368	35	52	16	237
- - - - - - - - - -	4,749	4,135	291	4,066	40	33	8	187
- - - - - - - - - -	2,928	2,263	161	2,195	20	14	4	106
- - - - - - - - - -	1,766	695	56	592	11	4	------	27
- - - - - - - - - -	1,637	294	24	192	7	1	------	11
- - - - - - - - - -	663	376	33	368	2	1	1	10

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--

	TOTAL	W	X	P C
IV. CURRICULUM OF HIGHEST DEGREE				
ENGINEERING CURRICULA	43,528	38,135	2,2	
AEROSPACE ENGINEERING	1,500	1,314		
AGRICULTURAL ENGINEERING	728	629		
AUTOMATION/CONTROL	121	103		
CHEMICAL ENGINEERING	3,234	2,829	2	
CIVIL ENGINEERING	6,961	6,204	2	
COMMUNICATIONS	183	146		
ELECTRICAL ENGINEERING	10,398	9,038	4	
ELECTRONICS ENGINEERING	2,769	2,451	1	
ENGINEERING, GENERAL	637	548		
ENGINEERING SCIENCES	435	386		
ENVIRONMENTAL/SANITARY ENGINEERING	377	347		
GEOLOGICAL ENGINEERING	269	219		
INDUSTRIAL ENGINEERING	1,736	1,459	1	
MANUFACTURING ENGINEERING	172	152		
MECHANICAL ENGINEERING	9,071	8,001	4	
METALLURGICAL ENGINEERING	1,577	1,386		
MINING ENGINEERING	476	376		
NAVAL ARCH/MARINE ENGINEERING	289	256		
NUCLEAR ENGINEERING	114	104		
PETROLEUM ENGINEERING	744	666		
PLANT/FACILITIES ENGINEERING	16	11		
PRODUCT ENGINEERING	20	16		
SYSTEMS ENGINEERING	146	132		
TRANSPORTATION ENGINEERING	102	94		
OTHER ENGINEERING	1,453	1,268		
NONENGINEERING CURRICULA	6,523	5,163	8	
COMPUTER/MATHEMATICS	382	321		
EDUCATION	291	223		
MANAGEMENT/BUSINESS ADMINISTRATION	2,295	1,806	3	
SCIENCE, BASIC	1,082	894		
OTHER NONENGINEERING	2,473	1,919	3	
NO REPORT	9,194	7,097	5	
V. SEX				
MALE	58,924	50,194	3,6	
FEMALE	321	201		
VI. CITIZENSHIP				
US CITIZEN	57,173	48,808	3,6	
NON-US CITIZEN	1,495	1,336		
NO REPORT	577	251		

1971 EMPLOYMENT SURVEY - ENGINEERS

TERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
ST DEGREE								
LA - - - - - - - - -	43,528	38,135	2,280	37,517	222	272	63	1,123
RING - - - - - - - -	1,500	1,314	79	1,289	9	25	4	69
NEERING - - - - - -	728	629	63	616	2	4	1	9
L - - - - - - - - -	121	103	11	100	1	3	1	4
ING - - - - - - - -	3,234	2,829	227	2,803	6	15	1	60
- - - - - - - - -	6,961	6,204	207	6,100	34	10	------	77
- - - - - - - - -	183	146	16	141	1	4	1	11
ERING - - - - - - -	10,398	9,038	473	8,889	53	75	25	317
EERING - - - - - -	2,769	2,451	146	2,414	15	36	13	143
RAL - - - - - - - -	637	548	45	543	1	4	1	21
CES - - - - - - - -	435	386	23	378	3	6	------	13
ITARY ENGINEERING	377	347	11	335	4	------	------	6
FRING - - - - - -	269	219	19	210	1	1	------	9
ERING - - - - - -	1,736	1,459	197	1,437	13	20	6	50
INEERING - - - - -	172	152	9	150	1	1	------	9
ERING - - - - - -	9,071	8,001	454	7,902	39	41	7	217
INEERING - - - - -	1,577	1,386	94	1,352	15	9	------	44
G - - - - - - - -	470	376	38	363	5	2	------	8
ENGINEERING - - -	289	256	13	250	1	------	------	7
NG - - - - - - - -	114	104	4	102	2	1	------	3
RING - - - - - - -	744	666	55	657	5	4	------	2
ENGINEERING - - -	16	11	1	10	------	1	------	2
NG - - - - - - - -	20	16	1	15	------	1	------	1
NG - - - - - - - -	146	132	7	130	1	------	------	6
GINEERING - - - -	102	94	4	94	------	1	------	1
- - - - - - - - -	1,453	1,268	83	1,237	10	8	3	34
ICULA - - - - - -	6,523	5,163	846	5,073	34	68	14	229
ICS - - - - - - -	382	321	33	311	5	4	3	19
- - - - - - - - -	291	223	39	218	------	5	------	6
SS ADMINISTRATION	2,295	1,806	370	1,790	6	30	6	78
- - - - - - - - -	1,082	894	76	862	13	11	1	47
ING - - - - - - -	2,473	1,919	328	1,892	10	18	4	79
- - - - - - - - -	9,194	7,097	596	6,976	38	68	13	316
- - - - - - - - -	58,924	50,194	3,691	49,387	290	402	89	1,627
- - - - - - - - -	321	201	31	179	4	6	1	41
- - - - - - - - -	57,173	48,808	3,624	48,035	262	389	88	1,594
- - - - - - - - -	1,495	1,336	66	1,289	29	15	2	68
- - - - - - - - -	577	251	32	242	3	4	------	6

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY-

	TOTAL	W	P
VII. DEGREE YEAR OF FIRST DEGREE			
1900 OR EARLIER	4	------	
1901-1905	6	------	---
1906-1910	21	2	---
1911-1915	45	10	
1916-1920	97	19	
1921-1925	254	77	
1926-1930	447	262	
1931-1935	718	609	
1936-1940	1,076	951	
1941-1945	1,414	1,273	
1946-1950	2,681	2,418	
1951-1955	2,540	2,295	
1956-1960	3,401	3,133	
1961	787	708	
1962	716	654	
1963	720	651	
1964	679	597	
1965	612	538	
1966	554	482	
1967	374	321	
1968	207	173	
1969	139	114	
1970	34	20	
1971	1	1	---
NO REPORT	41,718	35,087	2,
VIII. STUDENT STATUS			
FULL-TIME STUDENT	749	370	
PART-TIME STUDENT	3,237	2,911	
IX. REGISTRATION			
YES			
PROFESSIONAL ENGINEER	19,116	16,540	
ENGINEER-IN-TRAINING	4,305	3,913	
NO	33,907	28,661	2,
NO REPORT	1,917	1,281	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
E YEAR OF FIRST DEGREE								
OR EARLIER	4	------	1	------	------	------	------	------
1905	6	------	------	------	------	------	------	------
1910	21	2	------	2	------	------	------	------
1915	45	10	1	4	------	------	------	------
1920	97	19	1	11	------	------	------	1
1925	254	77	5	48	2	1	------	1
1930	447	262	20	240	5	------	------	9
1935	718	609	39	592	9	5	1	17
1940	1,076	951	67	927	12	9	3	41
1945	1,414	1,273	82	1,248	13	3	------	49
1950	2,681	2,418	177	2,390	19	20	8	74
1955	2,540	2,295	166	2,271	14	18	2	66
1960	3,401	3,133	183	3,088	28	18	3	67
- - - - - - - - - - - - - - -	787	708	52	701	4	5	------	19
- - - - - - - - - - - - - - -	716	654	40	642	3	1	------	15
- - - - - - - - - - - - - - -	720	651	42	634	6	4	------	17
- - - - - - - - - - - - - - -	679	597	53	578	12	3	------	23
- - - - - - - - - - - - - - -	612	538	46	522	4	6	------	20
- - - - - - - - - - - - - - -	554	482	36	464	6	3	------	23
- - - - - - - - - - - - - - -	374	321	23	315	3	6	1	22
- - - - - - - - - - - - - - -	207	173	17	165	3	4	1	14
- - - - - - - - - - - - - - -	139	114	7	106	1	1	------	11
- - - - - - - - - - - - - - -	34	20	3	19	------	------	1	5
- - - - - - - - - - - - - - -	1	1	------	1	------	------	------	------
PORT	41,718	35,087	2,661	34,598	150	301	70	1,174
NT STATUS								
TIME STUDENT	749	370	73	201	41	4	4	91
TIME STUDENT	3,237	2,911	220	2,838	35	31	10	99
TRATION								
FESSIONAL ENGINEER	19,116	16,540	715	16,221	106	56	16	339
NEER-IN-TRAINING	4,305	3,913	223	3,847	24	22	4	100
- - - - - - - - - - - - - - -	33,907	28,661	2,652	28,247	154	313	67	1,177
PORT	1,917	1,281	132	1,251	10	17	3	52

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT

	TOTAL	M
X. WEEKS UNEMPLOYED SINCE MARCH 1, 1970		
01	156	91
02	204	144
03	151	99
04	251	184
05	130	93
06	236	161
07	72	46
08	244	162
09	92	41
10	181	105
11	40	19
12	235	145
13	89	52
14	96	63
15	66	32
16 TO 20	421	247
21 TO 25	215	105
26 TO 30	275	126
31 TO 35	124	46
36 TO 40	155	48
41 TO 45	70	16
46 TO 50	79	20
51 TO 55	68	19
56 TO 60	90	15
61 OR MORE	127	9
UNEMPLOYED, NO REPORT OF WEEKS UNEMPLOYED	251	104
NONE	49,632	46,629
NO REPORT OF UNEMPLOYMENT	2,035	1,574
XI. BEGINNING DATE OF CURRENT EMPLOYMENT STATUS		
PRIOR TO MARCH 1970	47,838	45,157
MARCH 1970	473	341
APRIL 1970	411	309
MAY 1970	317	251
JUNE 1970	810	673
JULY 1970	447	325
AUGUST 1970	377	286
SEPTEMBER 1970	624	451
OCTOBER 1970	399	252
NOVEMBER 1970	369	254
DECEMBER 1970	293	186
JANUARY 1971	565	356
FEBRUARY 1971	448	268
MARCH 1971	523	301
APRIL 1971	520	279
MAY 1971	561	276
JUNE 1971	616	346
JULY 1971	134	84
NO REPORT	60	------

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
UNEMPLOYED SINCE MARCH 1, 1970	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - - - - - -	156	91	14	89	2	6	------	51
- - - - - - - - - - - - - - - -	204	144	16	140	1	7	1	44
- - - - - - - - - - - - - - - -	151	99	18	90	6	8	------	34
- - - - - - - - - - - - - - - -	251	184	22	176	5	11	------	45
- - - - - - - - - - - - - - - -	130	93	10	89	1	5	1	27
- - - - - - - - - - - - - - - -	236	161	29	149	3	14	1	46
- - - - - - - - - - - - - - - -	72	46	11	45	------	4	1	15
- - - - - - - - - - - - - - - -	244	162	35	151	5	13	7	47
- - - - - - - - - - - - - - - -	92	41	13	38	2	8	1	38
- - - - - - - - - - - - - - - -	181	105	23	95	8	11	------	53
- - - - - - - - - - - - - - - -	40	19	6	19	------	3	------	15
- - - - - - - - - - - - - - - -	235	145	34	128	9	16	5	56
- - - - - - - - - - - - - - - -	89	52	14	44	3	7	3	23
- - - - - - - - - - - - - - - -	96	63	14	56	5	6	3	19
- - - - - - - - - - - - - - - -	66	32	9	28	3	4	1	25
20 - - - - - - - - - - - - - - -	421	247	55	216	23	24	7	119
25 - - - - - - - - - - - - - - -	215	105	37	87	12	23	5	73
30 - - - - - - - - - - - - - - -	275	126	51	100	15	22	9	98
35 - - - - - - - - - - - - - - -	124	46	17	39	5	9	4	61
40 - - - - - - - - - - - - - - -	155	48	22	37	9	12	5	85
45 - - - - - - - - - - - - - - -	70	16	9	15	------	6	1	45
50 - - - - - - - - - - - - - - -	79	20	7	14	5	1	1	52
55 - - - - - - - - - - - - - - -	68	19	5	16	2	3	1	44
60 - - - - - - - - - - - - - - -	90	15	9	10	4	3	2	66
MORE - - - - - - - - - - - - - -	127	9	------	6	2	-----	------	118
OYED, NO REPORT OF								
S UNEMPLOYED - - - - - - - - - -	251	104	13	87	9	4	------	134
- - - - - - - - - - - - - - - -	49,632	46,629	3,003	46,185	114	159	13	------
ORT OF UNEMPLOYMENT - - - - - -	2,035	1,574	226	1,417	41	19	18	235
ING DATE OF CURRENT EMPLOYMENT								
US								
TO MARCH 1970 - - - - - - - - -	47,838	45,157	2,537	44,808	70	98	9	144
1970 - - - - - - - - - - - - -	473	341	70	306	11	12	2	62
1970 - - - - - - - - - - - - -	411	309	63	289	6	9	5	39
70 - - - - - - - - - - - - - -	317	251	45	235	6	6	3	21
970 - - - - - - - - - - - - - -	810	673	91	638	15	15	6	46
970 - - - - - - - - - - - - - -	447	325	62	306	7	13	5	60
1970 - - - - - - - - - - - - -	377	286	53	269	8	12	5	38
BER 1970 - - - - - - - - - - -	624	451	115	390	21	36	5	58
R 1970 - - - - - - - - - - - -	399	252	78	236	8	22	4	69
ER 1970 - - - - - - - - - - - -	369	254	55	234	12	15	7	60
ER 1970 - - - - - - - - - - - -	293	186	47	168	12	19	1	60
Y 1971 - - - - - - - - - - - - -	565	356	96	306	29	22	8	113
RY 1971 - - - - - - - - - - - -	448	268	62	249	9	16	6	118
1971 - - - - - - - - - - - - - -	523	301	79	264	23	36	5	143
1971 - - - - - - - - - - - - - -	520	279	82	245	18	36	3	159
71 - - - - - - - - - - - - - - -	561	276	86	254	10	22	8	199
971 - - - - - - - - - - - - - -	616	346	80	298	20	16	8	190
97 - - - - - - - - - - - - - - -	134	84	21	71	9	3	------	29
OR1 - - - - - - - - - - - - - -	60	------	------	------	------	------	------	60

	TOTAL	W	
XII. TERMINATING DATE OF LAST ENGINEERING RELATED POSITION			
PRIOR TO MARCH 1970	1,752	------	1
MARCH 1970	40	------	
APRIL 1970	39	------	
MAY 1970	45	------	
JUNE 1970	70	------	
JULY 1970	50	------	
AUGUST 1970	43	------	
SEPTEMBER 1970	68	------	
OCTOBER 1970	61	------	
NOVEMBER 1970	32	------	
DECEMBER 1970	42	------	
JANUARY 1971	54	------	
FEBRUARY 1971	36	------	
MARCH 1971	30	------	
APRIL 1971	32	------	
MAY 1971	24	------	
JUNE 1971	18	------	
JULY 1971	1	------	
NO REPORT	1,285	------	1
XIII. EXPLANATION FOR CURRENTLY BEING IN A NONENGINEERING RELATED POSITION			
NOT AN ENGINEER	164	------	
PREFER NONENGR. RELATED POSITION	585	------	
PROMOTED OUT OF ENGINEERING	989	------	
BETTER PAY	245	------	
LOCATIONAL PREFERENCE	58	------	
LENGTH OF TIME AWAY FROM ENGINEERING	50	------	
ENGR. RELATED POSITION NOT AVAILABLE	525	------	
OTHER	445	------	
NO REPORT	661	------	
XIV. TYPE OF POSITION SEEKING			
FULL-TIME	1,407	------	--
PART-TIME	50	------	--
TEMPORARY	16	------	--
NO REPORT	195	------	--

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
INATING DATE OF LAST ENGINEERING LATED POSITION								
R TO MARCH 1970	1,752	------	1,752	------	------	123	19	------
H 1970	40	------	40	------	------	18	4	------
L 1970	39	------	39	------	------	18	3	------
1970	45	------	45	------	------	14	7	------
1970	70	------	70	------	------	22	7	------
1970	50	------	50	------	------	15	6	------
ST 1970	43	------	43	------	------	10	5	------
EMBER 1970	68	------	68	------	------	20	3	------
BER 1970	61	------	61	------	------	27	6	------
MBER 1970	32	------	32	------	------	9	2	------
MBER 1970	42	------	42	------	------	19	1	------
ARY 1971	54	------	54	------	------	19	3	------
UARY 1971	36	------	36	------	------	10	2	------
H 1971	30	------	30	------	------	10	1	------
L 1971	32	------	32	------	------	8	3	------
1971	24	------	24	------	------	4	2	------
1971	18	------	18	------	------	1	------	------
1971	1	------	1	------	------	------	------	------
EPORT	1,285	------	1,285	------	------	61	16	------
ANATION FOR CURRENTLY BEING IN A NENGINEERING RELATED POSITION								
AN ENGINEER	164	------	164	------	------	------	------	------
ER NONENGR. RELATED POSITION	585	------	585	------	------	------	------	------
OTED OUT OF ENGINEERING	989	------	989	------	------	------	------	------
FR PAY	245	------	245	------	------	------	------	------
TIONAL PREFERENCE	58	------	58	------	------	------	------	------
TH OF TIME AWAY FROM ENGINEERING	50	------	50	------	------	------	------	------
. RELATED POSITION NOT AVAILABLE	525	------	525	------	------	408	90	------
R	445	------	445	------	------	------	------	------
EPORT	661	------	661	------	------	------	------	------
OF POSITION SEEKING								
-TIME	1,407	------	------	------	------	------	------	1,407
-TIME	50	------	------	------	------	------	------	50
ORARY	16	------	------	------	------	------	------	16
EPORT	195	------	------	------	------	------	------	195

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONT

	TOTAL	M	X	P O P L
XV. TYPE OF EMPLOYER, 1971				
PRIVATE INDUSTRY OR BUSINESS	38,706	34,985	2,416	34
SELF-EMPLOYED	2,249	2,096	116	1
COLLEGE OR UNIVERSITY	3,615	3,380	151	3
JUNIOR COLLEGE OR TECHNICAL INSTITUTE	282	237	29	
SECONDARY, ELEMENTARY, OR OTHER SCHOOL	66	39	22	
NONPROFIT ORGANIZATION	916	860	34	
FEDERAL GOVERNMENT	4,978	4,790	125	4
MILITARY	1,147	976	139	
STATE GOVERNMENT	1,005	976	22	
LOCAL GOVERNMENT	860	821	32	
OTHER	1,135	980	108	
NO REPORT	826	255	528	
XVI. FIELD OF SPECIALIZATION, 1971				
AEROSPACE ENGINEERING	3,861	3,467	189	3
AGRICULTURAL ENGINEERING	540	490	45	
AUTOMATION/CONTROL	860	810	26	
CHEMICAL ENGINEERING	2,072	1,893	139	1
CIVIL ENGINEERING	5,626	5,402	157	5
COMMUNICATIONS	1,398	1,282	75	1
COMPUTER/MATHEMATICS	1,293	1,142	103	1
EDUCATION, GENERAL	419	361	43	
ELECTRICAL ENGINEERING	4,769	4,476	189	4
ELECTRONICS ENGINEERING	4,262	3,852	184	3
ENGINEERING, GENERAL	2,343	2,225	72	2
ENGINEERING SCIENCES	479	450	10	
ENVIRONMENTAL/SANITARY ENGINEERING	1,089	1,050	22	1
GEOLOGICAL ENGINEERING	241	223	13	
INDUSTRIAL ENGINEERING	1,972	1,703	213	1.
MANAGEMENT/BUSINESS ADMINISTRATION	3,091	2,659	339	2.
MANUFACTURING ENGINEERING	2,751	2,420	208	2.
MECHANICAL ENGINEERING	5,232	4,896	191	4.
METALLURGICAL ENGINEERING	1,797	1,640	106	1.
MINING ENGINEERING	439	402	33	
NAVAL ARCH/MARINE ENGINEERING	440	414	17	
NUCLEAR ENGINEERING	408	386	12	
PETROLEUM ENGINEERING	1,149	1,047	94	1.
PLANT/FACILITIES ENGINEERING	1,406	1,292	81	1.
PRODUCT ENGINEERING	1,343	1,223	78	1.
SCIENCE, BASIC	312	278	22	
SYSTEMS ENGINEERING	1,610	1,466	78	1.
TRANSPORTATION ENGINEERING	687	659	24	
OTHER ENGINEERING	1,843	1,699	99	1.
OTHER NONENGINEERING	436	212	198	
NO REPORT	1,617	876	662	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
OF EMPLOYER, 1971								
TE INDUSTRY OR BUSINESS - - - -	38,706	34,985	2,416	34,733	103	278	60	1,305
EMPLOYED - - - - - - - - - - - -	2,249	2,096	116	1,852	80	16	4	37
GE OR UNIVERSITY - - - - - - - -	3,615	3,380	151	3,175	79	25	3	84
R COLLEGE OR TECHNICAL INSTITUTE	282	237	29	226	4	6	1	16
DARY, ELEMENTARY, OR OTHER SCHOOL	66	39	22	37	2	5	4	5
OFIT ORGANIZATION - - - - - - -	916	860	34	834	10	4	3	22
AL GOVERNMENT - - - - - - - - -	4,978	4,790	125	4,758	4	13	5	63
ARY - - - - - - - - - - - - - -	1,147	976	139	974	1	11	3	32
GOVERNMENT - - - - - - - - - -	1,005	976	22	969	1	4	------	7
GOVERNMENT - - - - - - - - - -	860	821	32	811	3	1	------	7
- - - - - - - - - - - - - - - -	1,135	980	108	966	4	21	4	47
PORT - - - - - - - - - - - - - -	826	255	528	231	3	24	3	43
OF SPECIALIZATION, 1971								
PACE ENGINEERING - - - - - - - -	3,861	3,467	189	3,427	15	53	10	205
ULTURAL ENGINEERING - - - - - -	540	490	45	479	2	3	------	5
ATION/CONTROL - - - - - - - - -	860	810	26	798	7	4	1	24
CAL ENGINEERING - - - - - - - -	2,072	1,893	139	1,867	7	6	------	40
ENGINEERING - - - - - - - - - -	5,626	5,402	157	5,305	29	8	1	67
NICATIONS - - - - - - - - - - -	1,398	1,282	75	1,258	13	5	2	41
TER/MATHEMATICS - - - - - - - -	1,293	1,142	103	1,115	12	14	3	48
TION, GENERAL - - - - - - - - -	419	361	43	351	4	4	3	15
RICAL ENGINEERING - - - - - - -	4,769	4,476	189	4,406	24	25	9	104
RONICS ENGINEERING - - - - - - -	4,262	3,852	184	3,787	32	36	20	226
EERING, GENERAL - - - - - - - -	2,343	2,225	72	2,195	5	9	1	46
EERING SCIENCES - - - - - - - -	479	450	10	433	5	2	1	19
ONMENTAL/SANITARY ENGINEERING -	1,089	1,050	22	1,026	6	2	1	17
GICAL ENGINEERING - - - - - - -	241	223	13	209	4	1	------	5
TRIAL ENGINEERING - - - - - - -	1,972	1,703	213	1,679	11	25	1	56
EMENT/BUSINESS ADMINISTRATION -	3,091	2,659	339	2,626	12	22	6	93
ACTURING ENGINEERING - - - - - -	2,751	2,420	208	2,395	14	41	3	123
NICAL ENGINEERING - - - - - - -	5,232	4,896	191	4,830	29	21	3	145
LURGICAL ENGINEERING - - - - - -	1,797	1,640	106	1,602	16	7	1	51
G ENGINEERING - - - - - - - - -	439	402	33	390	4	2	------	4
ARCH/MARINE ENGINEERING - - - -	440	414	17	408	------	------	------	9
AR ENGINEERING - - - - - - - - -	408	386	12	378	3	------	------	10
LEUM ENGINEERING - - - - - - - -	1,149	1,047	94	1,034	6	7	------	8
/FACILITIES ENGINEERING - - - -	1,406	1,292	81	1,287	------	7	3	33
CT ENGINEERING - - - - - - - - -	1,343	1,223	78	1,211	4	12	4	42
CE, BASIC - - - - - - - - - - -	312	278	22	271	3	2	------	12
MS ENGINEERING - - - - - - - - -	1,610	1,466	78	1,445	8	20	3	66
PORTATION ENGINEERING - - - - -	687	659	24	649	6	1	1	4
ENGINEERING - - - - - - - - - -	1,843	1,699	99	1,664	7	7	3	45
NO EERING - - - - - - - - - -	436	212	198	203	3	22	2	26
POR - - - - - - - - - - - - - -	1,617	876	662	838	3	40	8	79

	TOTAL	W
XVII. PRODUCT OR SERVICE AREA, 1971		
AGRICULTURE AND FOOD	738	6
AIRCRAFT AND SPACE	5,848	5,1
CERAMICS	226	1
CHEMICALS/ALLIED PRODUCTS	2,640	2,3
COMMUNICATIONS SERVICES	1,306	1,2
COMPUTERS	2,051	1,8
CONSTRUCTION/CIVIL ENGINEERING	6,121	5,8
EDUCATION AND INFORMATION SERVICES	3,185	2,9
ELECTRICAL EQUIPMENT	2,075	1,8
ELECTRONIC EQUIPMENT	5,332	4,7
MACHINERY/MECHANICAL EQUIPMENT	4,273	3,9
MARINE TRANSPORTATION	544	5
METALS, BASIC	1,481	1,3
METAL FABRICATED PRODUCTS	2,540	2,2
MINING	718	6
MOTOR VEHICLES	1,365	1,2
ORDNANCE	703	6
PETROLEUM	2,061	1,8
RAIL TRANSPORTATION	253	2
UTILITIES	3,419	3,2
OTHER	5,232	4,7
NO REPORT	3,674	2,7
XVIII. JOB FUNCTION, 1971		
MANAGER	18,408	16,8
ADMINISTRATION	6,516	5,8
CONSULTATION	2,781	2,4
CONSTRUCTION	1,727	1,6
DESIGN	7,290	6,8
DEVELOPMENT	6,818	6,2
ENGINEERING, GENERAL	10,659	9,7
PLANNING	2,439	2,2
PRODUCTION	2,925	2,6
RESEARCH	3,836	3,5
SALES AND SERVICE	3,434	3,0
TEACHING	2,705	2,5
OTHER	2,229	1,9
NO REPORT	2,426	1,

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
VICE AREA, 1971								
D FOOD - - - - - - - -	738	651	77	638	3	1	1	10
PACE - - - - - - - - -	5,848	5,102	370	5,053	19	107	27	376
- - - - - - - - - - -	226	198	22	191	2	1	------	6
ED PRODUCTS - - - - - -	2,640	2,371	217	2,358	4	13	1	52
SERVICES - - - - - - -	1,306	1,204	71	1,190	6	6	2	31
- - - - - - - - - - -	2,051	1,847	126	1,819	14	19	1	78
IVIL ENGINEERING - - -	6,121	5,878	161	5,784	27	8	2	82
INFORMATION SERVICES -	3,185	2,971	140	2,856	45	14	9	74
IPMENT - - - - - - - -	2,075	1,895	123	1,876	9	11	3	57
IPMENT - - - - - - - -	5,332	4,767	284	4,689	36	61	15	281
ANICAL EQUIPMENT - - -	4,273	3,931	220	3,873	27	21	3	122
RTATION - - - - - - - -	544	506	24	495	2	1	------	14
- - - - - - - - - - -	1,481	1,350	98	1,330	6	7	1	33
ED PRODUCTS - - - - - -	2,540	2,281	183	2,250	14	23	------	76
- - - - - - - - - - -	718	657	48	640	5	3	------	13
- - - - - - - - - - -	1,365	1,283	69	1,272	5	4	------	13
- - - - - - - - - - -	703	646	23	639	3	2	------	34
- - - - - - - - - - -	2,061	1,875	165	1,857	8	8	------	21
ATION - - - - - - - -	253	237	11	234	1	------	1	5
- - - - - - - - - - -	3,419	3,234	156	3,202	9	8	2	29
- - - - - - - - - - -	5,232	4,779	342	4,682	33	38	8	111
- - - - - - - - - - -	3,674	2,732	792	2,638	16	52	14	150
1971								
- - - - - - - - - - -	18,408	16,893	1,082	16,730	72	91	25	433
- - - - - - - - - - -	6,516	5,832	562	5,803	10	32	6	122
- - - - - - - - - - -	2,781	2,608	111	2,373	60	18	------	62
- - - - - - - - - - -	1,727	1,612	77	1,605	1	3	3	38
- - - - - - - - - - -	7,290	6,812	223	6,759	24	43	6	255
- - - - - - - - - - -	6,818	6,242	325	6,199	26	55	17	251
GENERAL - - - - - - - -	10,659	9,928	431	9,845	37	56	9	300
- - - - - - - - - - -	2,439	2,203	161	2,178	8	24	4	75
- - - - - - - - - - -	2,925	2,497	313	2,483	6	31	7	115
- - - - - - - - - - -	3,836	3,536	183	3,400	52	30	5	117
VICE - - - - - - - - -	3,434	3,050	300	3,031	12	28	8	84
- - - - - - - - - - -	2,705	2,550	103	2,454	38	13	6	52
- - - - - - - - - - -	2,229	1,935	214	1,908	9	33	9	80
- - - - - - - - - - -	2,426	1,590	719	1,528	11	42	10	117

1971 EMPLOYMENT SURVEY - EN
CHARACTERISTICS OF ENGINEERS IN EMPLOYME

	TOTAL	W
XIX. AREA, 1971		
HEALTH	716	641
PUBLIC WORKS	3,375	3,234
URBAN DEVELOPMENT	727	688
POLLUTION	1,345	1,289
DEFENSE	9,648	8,644
SPACE	2,586	2,273
TRANSPORTATION	4,336	4,002
ATOMIC ENERGY	1,267	1,198
INDUSTRIAL PRODUCTS/PROCESSES	16,207	14,705
EDUCATION	3,335	3,108
CONSUMER PRODUCTS	3,669	3,289
OTHER	6,674	6,193
NO REPORT	1,900	1,131
XX. FEDERAL SUPPORT, 1971		
YES	24,204	22,192
NO	28,846	26,338
DON'T KNOW	1,681	1,457
NO REPORT	1,054	408
PERCENT OF FEDERAL SUPPORT, 1971		
1 TO 25 PERCENT	4,485	4,236
26 TO 50 PERCENT	2,387	2,212
51 TO 75 PERCENT	1,887	1,730
76 TO 100 PERCENT	13,688	12,439
DON'T KNOW	1,587	1,418
NO REPORT	170	155
XXI. NOTIFICATION OF POSITION TERMINATION		
PRIOR TO JULY 1, 1971	391	301
PRIOR TO JANUARY 1, 1972	557	515
PRIOR TO JULY 1, 1972	260	239
NO REPORT	52,909	49,334

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
71	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - - - - -	716	641	53	615	9	4	2	22
ORKS - - - - - - - - - - - - -	3,375	3,234	96	3,177	11	8	4	45
VELOPMENT - - - - - - - - - -	727	688	26	671	5	3	1	13
N - - - - - - - - - - - - - -	1,345	1,289	27	1,256	10	3	1	29
- - - - - - - - - - - - - - -	9,648	8,644	537	8,549	42	113	20	467
- - - - - - - - - - - - - - -	2,586	2,273	149	2,249	11	46	12	164
TATION - - - - - - - - - - -	4,336	4,002	191	3,946	28	25	4	143
NERGY - - - - - - - - - - - -	1,267	1,198	45	1,181	6	4	1	24
AL PRODUCTS/PROCESSES - - - -	16,207	14,705	1,088	14,525	68	78	20	414
N - - - - - - - - - - - - - -	3,335	3,108	149	2,970	52	21	5	78
PRODUCTS - - - - - - - - - -	3,669	3,289	297	3,257	11	29	6	83
- - - - - - - - - - - - - - -	6,674	6,193	386	6,090	31	35	5	95
T - - - - - - - - - - - - - -	1,900	1,131	678	1,080	10	39	9	91
SUPPORT, 1971								
- - - - - - - - - - - - - - -	24,204	22,192	1,135	21,838	130	204	46	877
- - - - - - - - - - - - - - -	28,846	26,338	1,858	25,945	143	154	32	650
OW - - - - - - - - - - - - -	1,681	1,457	138	1,409	17	24	8	86
T - - - - - - - - - - - - - -	1,054	408	591	374	4	26	4	55
OF FEDERAL SUPPORT, 1971								
5 PERCENT - - - - - - - - - -	4,485	4,238	173	4,188	16	13	1	74
0 PERCENT - - - - - - - - - -	2,387	2,212	94	2,160	17	21	1	81
5 PERCENT - - - - - - - - - -	1,887	1,730	93	1,702	10	17	5	64
0 PERCENT - - - - - - - - - -	13,688	12,439	676	12,269	62	132	33	53
OW - - - - - - - - - - - - -	1,587	1,418	90	1,361	23	20	4	71
T - - - - - - - - - - - - - -	170	155	9	150	2	1	2	6
TION OF POSITION TERMINATION								
JULY 1, 1971 - - - - - - - -	391	307	84	242	44	34	20	------
JANUARY 1, 1972 - - - - - -	557	515	42	450	42	16	8	------
JULY 1, 1972 - - - - - - - -	260	239	21	216	8	4	------	------
- - - - - - - - - - - - - - -	52,909	49,334	3,575	48,658	200	354	62	------

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--

P O

	TOTAL	W	X
XXII. EMPLOYMENT STATUS, 1970			
FULL-TIME EMPLOYED			
ENGINEERING RELATED	49,362	47,540	69
NONENGINEERING RELATED	2,762	269	2,42
PART-TIME EMPLOYED			
ENGINEERING RELATED	799	718	2
NONENGINEERING RELATED	165	71	8
NOT EMPLOYED & SEEKING EMPLOYMENT	890	523	8
NOT EMPLOYED & NOT SEEKING EMPLOYMENT	628	499	6
RETIRED	18	15	
NO REPORT	1,161	760	35
XXIII. TYPE OF EMPLOYER, 1970			
PRIVATE INDUSTRY OR BUSINESS	36,042	32,772	2,26
SELF-EMPLOYED	1,870	1,685	15
COLLEGE OR UNIVERSITY	3,559	3,359	14
JUNIOR COLLEGE OR TECHNICAL INSTITUTE	249	211	3
SECONDARY, ELEMENTARY, OR OTHER SCHOOL	71	38	2
NONPROFIT ORGANIZATION	862	794	5
FEDERAL GOVERNMENT	4,551	4,403	10
MILITARY	1,222	1,032	16
STATE GOVERNMENT	903	875	2
LOCAL GOVERNMENT	750	722	2
OTHER	1,040	919	9
NOT EMPLOYED	1,536	1,037	15
NO REPORT	3,130	2,548	48

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
STATUS, 1970								
EMPLOYED								
ING RELATED - - - - - - - -	49,362	47,540	690	47,244	147	203	53	1,132
EERING RELATED - - - - - -	2,762	269	2,422	257	4	127	2	71
EMPLOYED								
ING RELATED - - - - - - - -	799	718	23	316	109	6	1	58
EERING RELATED - - - - - -	165	71	81	65	4	12	15	13
ED & SEEKING EMPLOYMENT - -	890	523	84	487	20	40	11	283
ED & NOT SEEKING EMPLOYMENT	628	499	68	462	9	13	5	61
- - - - - - - - - - - - -	18	15	2	13	------	-----	------	1
- - - - - - - - - - - - - -	1,161	760	352	722	1	7	3	49
PLOYER, 1970								
DUSTRY OR BUSINESS - - - -	36,042	32,772	2,266	32,493	121	241	48	1,004
YED - - - - - - - - - - - -	1,870	1,685	155	1,533	39	12	5	30
UNIVERSITY - - - - - - - -	3,559	3,359	144	3,204	62	20	3	56
LEGE OR TECHNICAL INSTITUTE	249	211	30	200	4	1	1	8
ELEMENTARY, OR OTHER SCHOOL	71	38	27	38	------	7	------	6
ORGANIZATION - - - - - - -	862	794	53	777	8	5	2	15
VERNMENT - - - - - - - - -	4,551	4,403	101	4,373	6	15	3	47
- - - - - - - - - - - - - -	1,222	1,032	163	1,018	2	21	2	27
RNMENT - - - - - - - - - -	903	875	22	872	1	3	1	6
RNMENT - - - - - - - - - -	750	722	23	715	2	2	------	5
- - - - - - - - - - - - - -	1,040	919	96	910	3	14	3	25
ED - - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - - - - - -	3,130	2,548	488	2,471	17	14	6	94

1971 EMPLOYMENT SURVEY - ENGINEE
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SU

XXV. FIELD OF SPECIALIZATION, 1970	TOTAL	W
AEROSPACE ENGINEERING	3,821	3,573
AGRICULTURAL ENGINEERING	497	472
AUTOMATION/CONTROL	792	750
CHEMICAL ENGINEERING	1,913	1,835
CIVIL ENGINEERING	5,188	5,085
COMMUNICATIONS	1,261	1,169
COMPUTER/MATHEMATICS	1,282	1,089
EDUCATION, GENERAL	478	383
ELECTRICAL ENGINEERING	4,294	4,145
ELECTRONICS ENGINEERING	3,895	3,628
ENGINEERING, GENERAL	2,244	2,163
ENGINEERING SCIENCES	451	433
ENVIRONMENTAL/SANITARY ENGINEERING	912	889
GEOLOGICAL ENGINEERING	233	217
INDUSTRIAL ENGINEERING	1,759	1,622
MANAGEMENT/BUSINESS ADMINISTRATION	3,281	2,509
MANUFACTURING ENGINEERING	2,467	2,250
MECHANICAL ENGINEERING	4,848	4,661
METALLURGICAL ENGINEERING	1,672	1,572
MINING ENGINEERING	387	371
NAVAL ARCH/MARINE ENGINEERING	422	404
NUCLEAR ENGINEERING	384	375
PETROLEUM ENGINEERING	1,052	1,011
PLANT/FACILITIES ENGINEERING	1,278	1,218
PRODUCT ENGINEERING	1,229	1,160
SCIENCE, BASIC	300	267
SYSTEMS ENGINEERING	1,462	1,364
TRANSPORTATION ENGINEERING	619	598
OTHER ENGINEERING	1,667	1,580
OTHER NONENGINEERING	1,371	455
NOT EMPLOYED	1,536	1,037
NO REPORT	2,790	2,110

1971 EMPLOYMENT SURVEY - ENGINEERS

HARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
LIZATION, 1970								
IEERING	3,821	3,573	106	3,527	22	39	9	142
GINEERING	497	472	18	463	2	1	------	7
ROL	792	750	23	740	6	4	1	19
ERING	1,913	1,835	50	1,814	6	4	------	28
NG	5,188	5,085	49	5,008	26	4	1	54
	1,261	1,169	61	1,154	7	6	3	31
ATICS	1,282	1,089	150	1,061	13	12	2	43
RAL	478	383	83	373	3	8	2	12
NEERING	4,294	4,145	86	4,086	19	15	3	63
INEERING	3,895	3,628	88	3,575	25	24	15	179
NERAL	2,244	2,163	41	2,134	5	8	------	40
ENCES	451	433	4	422	3	1	------	14
ANITARY ENGINEERING	912	889	11	873	5	------	1	12
NFERING	233	217	11	205	3	1	------	5
NEERING	1,759	1,622	95	1,604	7	13	2	42
NESS ADMINISTRATION	3,281	2,509	690	2,477	13	21	4	82
NGINEERING	2,467	2,250	121	2,229	9	36	3	96
NEERING	4,848	4,661	82	4,606	25	12	2	105
NGINEERING	1,672	1,572	59	1,538	13	7	1	41
ING	387	371	15	358	3	------	------	1
NE ENGINEERING	422	404	9	399	------	------	------	9
RING	384	375	3	367	3	------	------	6
EERING	1,052	1,011	37	999	5	1	------	4
S ENGINEERING	1,278	1,218	34	1,214	------	6	2	26
RING	1,229	1,160	39	1,151	4	10	3	30
	300	267	27	261	3	3	------	6
RING	1,462	1,364	51	1,344	6	15	------	47
ENGINEERING	619	598	18	590	5	2	1	3
NG	1,667	1,580	45	1,551	9	4	3	42
ERING	1,371	455	873	438	6	80	7	43
	1,536	1,037	154	962	29	53	16	345
	2,790	2,110	589	2,043	9	18	9	91

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--C

		TOTAL	M	X	P O
XXVI.	PRODUCT OR SERVICE AREA, 1970				
	AGRICULTURE AND FOOD	713	622	7	
	AIRCRAFT AND SPACE	5,748	5,202	25	
	CERAMICS	202	178	2	
	CHEMICALS/ALLIED PRODUCTS	2,509	2,283	19	
	COMMUNICATIONS SERVICES	1,157	1,074	6	
	COMPUTERS	1,943	1,700	16	
	CONSTRUCTION/CIVIL ENGINEERING	5,569	5,429	8	
	EDUCATION AND INFORMATION SERVICES	3,151	2,902	19	
	ELECTRICAL EQUIPMENT	1,888	1,749	9	
	ELECTRONIC EQUIPMENT	4,915	4,469	22	
	MACHINERY/MECHANICAL EQUIPMENT	3,901	3,617	19	
	MARINE TRANSPORTATION	499	468	2	
	METALS, BASIC	1,382	1,267	9	
	METAL FABRICATED PRODUCTS	2,311	2,087	16	
	MINING	662	608	4	
	MOTOR VEHICLES	1,267	1,187	7	
	ORDNANCE	697	647	2	
	PETROLEUM	1,929	1,789	12	
	RAIL TRANSPORTATION	223	209	1	
	UTILITIES	3,016	2,848	14	
	OTHER	5,263	4,535	63	
	NOT EMPLOYED	1,536	1,037	15	
	NO REPORT	5,304	4,488	67	
XXVII.	JOB FUNCTION, 1970				
	MANAGER	16,144	14,700	1,10	
	ADMINISTRATION	6,318	5,415	79	
	CONSULTATION	2,446	2,279	12	
	CONSTRUCTION	1,515	1,449		
	DESIGN	6,767	6,473	10	
	DEVELOPMENT	6,333	5,969	16	
	ENGINEERING, GENERAL	9,541	9,152	16	
	PLANNING	2,251	2,029	19	
	PRODUCTION	2,752	2,381	29	
	RESEARCH	3,789	3,580	12	
	SALES AND SERVICE	3,345	2,858	4	
	TEACHING	2,565	2,419	10	
	OTHER	2,458	1,918	4	
	NOT EMPLOYED	1,536	1,037	15	
	NO REPORT	4,169	3,436	6	

1971 EMPLOYMENT SURVEY - ENGINEERS

ARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
ICE AREA, 1970								
FOOD - - - - - - - - -	713	622	78	611	3	4	1	13
ACE - - - - - - - - -	5,748	5,202	253	5,145	24	89	19	293
- - - - - - - - - -	202	178	20	173	------	1	------	4
) PRODUCTS - - - - - -	2,509	2,283	190	2,270	5	10	------	36
SERVICES - - - - - - -	1,157	1,074	61	1,062	4	5	2	22
- - - - - - - - - -	1,943	1,700	169	1,674	14	19	1	74
VIL ENGINEERING - - -	5,569	5,429	80	5,352	27	2	1	60
NFORMATION SERVICES -	3,151	2,902	193	2,806	39	23	5	56
PMENT - - - - - - - -	1,888	1,749	98	1,736	7	7	4	41
PMENT - - - - - - - -	4,915	4,469	228	4,401	31	47	11	218
NICAL EQUIPMENT - - -	3,901	3,617	194	3,565	23	17	3	90
TATION - - - - - - - -	499	468	21	460	1	1	------	10
- - - - - - - - - -	1,382	1,267	93	1,253	4	4	1	22
) PRODUCTS - - - - - -	2,311	2,087	165	2,069	4	18	1	59
- - - - - - - - - -	662	608	46	594	3	1	------	8
- - - - - - - - - -	1,267	1,187	70	1,177	5	6	------	10
- - - - - - - - - -	697	647	20	641	2	------	1	30
- - - - - - - - - -	1,929	1,789	126	1,775	5	3	------	14
TION - - - - - - - -	223	209	10	206	1	------	1	4
- - - - - - - - - -	3,016	2,848	146	2,817	8	6	------	22
- - - - - - - - - -	5,263	4,535	630	4,454	35	61	11	98
- - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - -	5,304	4,488	677	4,363	20	31	12	139
970								
- - - - - - - - - -	16,144	14,700	1,108	14,552	66	73	24	336
- - - - - - - - - -	6,318	5,415	795	5,374	14	26	4	108
- - - - - - - - - -	2,446	2,279	122	2,110	40	10	1	45
- - - - - - - - - -	1,515	1,449	39	1,440	4	------	2	27
- - - - - - - - - -	6,767	6,473	100	6,420	27	29	7	194
- - - - - - - - - -	6,333	5,969	164	5,931	20	33	14	200
IERAL - - - - - - - -	9,541	9,152	169	9,076	30	39	4	220
- - - - - - - - - -	2,251	2,029	158	2,009	7	26	2	64
- - - - - - - - - -	2,752	2,381	294	2,372	4	30	4	77
- - - - - - - - - -	3,789	3,580	125	3,469	45	14	4	84
CE - - - - - - - - -	3,345	2,858	410	2,838	12	35	7	77
- - - - - - - - - -	2,565	2,419	107	2,340	33	18	2	39
- - - - - - - - - -	2,458	1,918	471	1,892	9	65	14	69
- - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - -	4,169	3,436	614	3,333	20	30	9	119

1971 EMPLOYMENT SURVEY - EM
CHARACTERISTICS OF ENGINEERS IN EMPLOYME

	TOTAL	W
XXVIII. AREA, 1970		
HEALTH	649	5
PUBLIC WORKS	3,072	2,9
URBAN DEVELOPMENT	609	5
POLLUTION	1,056	1,0
DEFENSE	9,488	8,6
SPACE	2,583	2,3
TRANSPORTATION	4,061	3,7
ATOMIC ENERGY	1,134	1,0
INDUSTRIAL PRODUCTS/PROCESSES	15,308	14,0
EDUCATION	3,333	3,0
CONSUMER PRODUCTS	3,454	3,0
OTHER	6,438	5,7
NOT EMPLOYED	1,536	1,0
NO REPORT	3,064	2,4
XXIX. FEDERAL SUPPORT, 1970		
YES	22,877	21,2
NO	27,263	24,7
DON'T KNOW	1,633	1,4
NOT EMPLOYED	1,536	1,0
NO REPORT	2,476	1,9
PERCENT OF FEDERAL SUPPORT, 1970		
1 TO 25 PERCENT	3,940	3,7
26 TO 50 PERCENT	2,170	2,0
51 TO 75 PERCENT	1,784	1,6
76 TO 100 PERCENT	13,521	12,5
DON'T KNOW	1,381	1,2
NO REPORT	81	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
O								
- - - - - - - - - - - - - - -	649	555	78	539	6	9	3	16
RKS - - - - - - - - - - - - -	3,072	2,993	51	2,944	11	5	1	28
ELOPMENT - - - - - - - - - - -	609	571	30	561	4	1	------	8
- - - - - - - - - - - - - - -	1,056	1,015	25	990	9	2	1	16
- - - - - - - - - - - - - - -	9,488	8,678	437	8,576	44	95	17	373
- - - - - - - - - - - - - - -	2,583	2,377	90	2,345	18	35	6	116
ATION - - - - - - - - - - - -	4,061	3,766	183	3,720	20	25	3	112
ERGY - - - - - - - - - - - - -	1,134	1,082	35	1,063	8	6	1	17
L PRODUCTS/PROCESSES - - - - -	15,308	14,011	971	13,862	51	59	13	326
- - - - - - - - - - - - - - -	3,333	3,078	191	2,965	42	28	4	64
PRODUCTS - - - - - - - - - - -	3,454	3,044	335	3,007	13	33	5	75
- - - - - - - - - - - - - - -	6,438	5,781	574	5,694	26	39	10	83
YED - - - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - - - - - - -	3,064	2,407	568	2,338	13	18	10	89
UPPORT, 1970								
- - - - - - - - - - - - - - -	22,877	21,258	950	20,946	124	174	31	669
- - - - - - - - - - - - - - -	27,263	24,737	2,018	24,384	123	152	32	508
- - - - - - - - - - - - - - -	1,633	1,450	109	1,417	12	17	4	74
YED - - - - - - - - - - - - -	1,536	1,037	154	962	29	53	16	345
- - - - - - - - - - - - - - -	2,476	1,913	491	1,857	6	12	7	72
F FEDERAL SUPPORT, 1970								
PERCENT - - - - - - - - - - -	3,940	3,723	163	3,680	19	16	------	54
PERCENT - - - - - - - - - - -	2,170	2,021	89	1,986	15	15	------	60
PERCENT - - - - - - - - - - -	1,784	1,662	66	1,633	9	12	5	56
PERCENT - - - - - - - - - - -	13,521	12,510	560	12,352	61	114	22	451
- - - - - - - - - - - - - - -	1,381	1,268	67	1,223	18	15	4	46
- - - - - - - - - - - - - - -	81	74	5	72	2	2	------	2

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CO

XXX. SMSA, 1971	TOTAL	W	X	P O P
ALABAMA	704	620	35	
ALABAMA, OTHER	120	104	10	
BIRMINGHAM	179	159	8	
GADSDEN	5	4	1	
HUNTSVILLE	261	246	5	
MOBILE	83	66	5	
MONTGOMERY	18	13	2	
TUSCALOOSA	38	28	4	
COLUMBUS	------	------	------	
ALASKA	114	108	5	
ALASKA, OTHER	114	108	5	
ARIZONA	696	551	40	
ARIZONA, OTHER	105	83	5	
PHOENIX	416	334	23	
TUCSON	175	134	12	
ARKANSAS	189	152	9	
ARKANSAS, OTHER	96	68	4	
LITTLE ROCK-NORTH LITTLE ROCK	60	54	4	
PINE BLUFF	17	15	1	
MEMPHIS	2	2	------	
FORT SMITH	13	12	------	
TEXARKANA	1	1	------	
CALIFORNIA	8,213	6,944	447	
CALIFORNIA, OTHER	194	152	16	
BAKERSFIELD	100	90	2	
FRESNO	33	29	2	
LOS ANGELES-LONG BEACH	2,969	2,503	167	
SACRAMENTO	274	235	15	
SAN BERNARDINO-RIVERSIDE-ONTARIO	206	161	15	
SAN DIEGO	587	485	33	
SAN FRANCISCO-OAKLAND	1,506	1,284	79	
SAN JOSE	990	873	50	
SANTA BARBARA	168	139	8	
STOCKTON	16	15	1	
ANAHEIM-SANTA ANA-GARDEN GROVE	855	719	43	
VALLEJO-NAPA	44	38	1	
SALINAS-MONTEREY	60	41	7	
OXNARD-VENTURA	211	180	8	
COLORADO	961	836	57	
COLORADO, OTHER	134	114	11	
COLORADO SPRINGS	75	61	8	
DENVER	740	652	36	
PUEBLO	12	9	2	

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - - - -	704	620	35	616	1	3	------	11
OTHER - - - - - - - - - - -	120	104	10	103	1	------	------	1
AM - - - - - - - - - - - - -	179	159	8	158	------	------	------	------
- - - - - - - - - - - - - -	5	4	1	4	------	------	------	------
LE - - - - - - - - - - - - -	261	246	5	246	------	2	------	7
- - - - - - - - - - - - - -	83	66	5	66	------	1	------	2
RY - - - - - - - - - - - - -	18	13	2	13	------	------	------	------
SA - - - - - - - - - - - - -	38	28	4	26	------	------	------	1
- - - - - - - - - - - - - -	------	------	------	------	------	------	------	------
- - - - - - - - - - - - - -	114	108	5	108	------	------	------	------
OTHER - - - - - - - - - - -	114	108	5	108	------	------	------	------
- - - - - - - - - - - - - -	696	551	40	540	4	9	------	27
OTHER - - - - - - - - - - -	105	83	5	82	------	1	------	3
- - - - - - - - - - - - - -	416	334	23	329	2	7	------	16
- - - - - - - - - - - - - -	175	134	12	129	2	1	------	8
- - - - - - - - - - - - - -	189	152	9	151	------	1	------	1
, OTHER - - - - - - - - - -	96	68	4	67	------	1	------	1
OCK-NORTH LITTLE ROCK - - -	60	54	4	54	------	------	------	------
FF - - - - - - - - - - - - -	17	15	1	15	------	------	------	------
- - - - - - - - - - - - - -	2	2	------	2	------	------	------	------
TH - - - - - - - - - - - - -	13	12	------	12	------	------	------	------
A - - - - - - - - - - - - -	1	1	------	1	------	------	------	------
- - - - - - - - - - - - - -	8,213	6,944	447	6,790	62	86	24	412
IA, OTHER - - - - - - - - -	194	152	16	151	------	3	2	7
ELD - - - - - - - - - - - -	100	90	2	90	------	------	------	1
- - - - - - - - - - - - - -	33	29	2	29	------	------	------	------
LES-LONG BEACH - - - - - - -	2,969	2,503	167	2,438	33	41	9	190
TO - - - - - - - - - - - - -	274	235	15	234	------	3	------	8
ARDINO-RIVERSIDE-ONTARIO -	206	161	15	156	2	3	1	11
O - - - - - - - - - - - - -	587	485	33	476	3	8	3	32
CISCO-OAKLAND - - - - - - -	1,506	1,284	79	1,255	8	8	4	44
- - - - - - - - - - - - - -	990	873	50	852	8	12	2	33
RBARA - - - - - - - - - - -	168	139	8	136	1	2	1	12
- - - - - - - - - - - - - -	16	15	1	15	------	------	------	------
SANTA ANA-GARDEN GROVE - -	855	719	43	705	4	5	1	61
NAPA - - - - - - - - - - - -	44	38	1	37	1	------	------	------
MONTEREY - - - - - - - - - -	60	41	7	40	------	------	------	1
ENTURA - - - - - - - - - - -	211	180	8	176	2	1	1	12
- - - - - - - - - - - - - -	961	836	57	817	6	2	1	17
, OTHER - - - - - - - - - -	134	114	11	107	3	------	------	------
SPRINGS - - - - - - - - - -	75	61	8	59	1	------	------	2
- - - - - - - - - - - - - -	740	652	36	642	2	2	1	15
- - - - - - - - - - - - - -	12	9	2	9	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGI
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT

XXX. SMSA, 1971 - CONTINUED	TOTAL	W
CONNECTICUT	1,419	1,183
CONNECTICUT, OTHER	330	267
BRIDGEPORT	175	144
HARTFORD	373	325
MERIDEN	8	7
NEW BRITAIN	29	26
NEW HAVEN	98	79
NEW LONDON-GROTON-NORWICH	72	69
NORWALK	90	65
STAMFORD	148	122
WATERBURY	92	75
SPRINGFIELD-CHICOPEE-HOLYOKE	4	4
DELAWARE	329	281
DELAWARE, OTHER	27	23
WILMINGTON	302	258
DISTRICT OF COLUMBIA	390	328
DISTRICT OF COLUMBIA, OTHER	------	------
WASHINGTON	390	328
FLORIDA	1,491	1,099
FLORIDA, OTHER	298	189
FORT LAUDERDALE-HOLLYWOOD	94	58
JACKSONVILLE	82	66
MIAMI	196	166
ORLANDO	403	316
PENSACOLA	44	37
TAMPA-ST PETERSBURG	232	156
WEST PALM BEACH	119	90
TALLAHASSEE	23	21
GEORGIA	630	511
GEORGIA, OTHER	108	79
ALBANY	11	8
ATLANTA	426	349
MACON	30	28
SAVANNAH	36	29
AUGUSTA	12	11
CHATTANOOGA	------	------
COLUMBUS	7	7
HAWAII	214	190
HAWAII, OTHER	25	18
HONOLULU	189	172
IDAHO	148	134
IDAHO, OTHER	110	99
BOISE CITY	38	35

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
UT	1,419	1,183	111	1,162	3	13	1	59
ICUT, OTHER	330	267	25	259	1	4	------	19
ORT	175	144	17	142	------	3	------	6
D	373	325	18	323	------	------	------	19
	8	7	------	7	------	------	------	------
TAIN	29	26	3	24	1	------	------	------
EN	98	79	12	78	1	2	------	2
DON-GROTON-NORWICH	72	69	2	68	------	1	------	------
	90	65	12	63	------	------	1	7
D	148	122	13	119	------	------	------	2
RY	92	75	9	75	------	3	------	4
FIELD-CHICOPEE-HOLYOKE	4	4	------	4	------	------	------	------
	329	281	27	279	1	1	------	2
E, OTHER	27	23	2	23	------	1	------	------
TON	302	258	25	256	1	------	------	2
OF COLUMBIA	390	328	27	317	2	1	------	1
OF COLUMBIA, OTHER	------	------	------	------	------	------	------	------
ON	390	328	27	317	2	1	------	1
	1,491	1,099	88	1,085	5	12	3	51
OTHER	298	189	18	183	3	2	1	7
DERDALE-HOLLYWOOD	94	58	3	57	------	------	------	3
ILLE	82	66	4	63	------	------	------	1
	196	166	14	164	2	2	------	6
	403	316	22	315	------	4	1	24
A	44	37	4	36	------	------	------	------
PETERSBURG	232	156	18	156	------	3	1	8
M BEACH	119	90	5	90	------	1	------	1
SEE	23	21	------	21	------	------	------	1
	630	511	53	506	2	8	------	12
OTHER	108	79	13	77	------	2	------	4
	11	8	2	8	------	1	------	------
	426	349	33	346	2	4	------	6
	30	28	1	28	------	------	------	1
	36	29	3	29	------	------	------	1
	12	11	1	11	------	1	------	------
OGA	------	------	------	------	------	------	------	------
	7	7	------	7	------	------	------	------
	214	190	13	187	3	1	------	4
OTHER	25	18	3	18	------	------	------	1
	189	172	10	169	3	1	------	3
	148	134	4	131	------	------	------	3
THER	110	99	4	96	------	------	------	3
TY	38	35	------	35	------	------	------	------

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	P O X
ILLINOIS	2,957	2,543	21
ILLINOIS, OTHER	196	160	1
CHAMPAIGN-URBANA	126	110	
CHICAGO	2,022	1,722	15
DECATUR	59	52	
PEORIA	187	165	1
ROCKFORD	113	102	
SPRINGFIELD	56	47	
BLOOMINGTON-NORMAL	10	9	
DAVENPORT-ROCK ISLAND-MOLINE	112	105	
ST LOUIS	76	71	
INDIANA	1,210	1,056	8
INDIANA, OTHER	312	273	2
FORT WAYNE	116	101	1
GARY-HAMMOND-EAST CHICAGO	150	127	1
INDIANAPOLIS	269	244	1
MUNCIE	31	28	
SOUTH BEND	78	64	
TERRE HAUTE	22	16	
LAFAYETTE-WEST LAFAYETTE	113	95	
ANDERSON	32	30	
CINCINNATI	2	1	
EVANSVILLE	70	64	
LOUISVILLE	15	13	
IOWA	585	517	2
IOWA, OTHER	227	192	1
CEDAR RAPIDS	87	78	
DES MOINES	72	69	
DUBUQUE	37	35	
WATERLOO	61	55	
SIOUX CITY	14	12	-----
DAVENPORT-ROCK ISLAND-MOLINE	81	72	
OMAHA	6	4	
KANSAS	442	371	2
KANSAS, OTHER	143	122	
TOPEKA	38	32	
WICHITA	116	95	
KANSAS CITY	145	122	1
KENTUCKY	378	322	3
KENTUCKY, OTHER	116	102	1
LEXINGTON	76	70	
CINCINNATI	19	12	
EVANSVILLE	3	1	
HUNTINGTON-ASHLAND	13	9	
LOUISVILLE	151	128	

1971 EMPLOYMENT SURVEY - ENGINEERS

ERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
ED								
- - - - - - - - - -	2,957	2,543	213	2,510	11	10	4	60
- - - - - - - - - -	196	160	18	156	1	1	------	2
- - - - - - - - - -	126	110	4	102	4	------	------	1
- - - - - - - - - -	2,022	1,722	156	1,709	3	5	4	54
- - - - - - - - - -	59	52	5	51	------	------	------	------
- - - - - - - - - -	187	165	15	164	1	1	------	------
- - - - - - - - - -	113	102	5	99	2	1	------	3
- - - - - - - - - -	56	47	4	47	------	------	------	------
- - - - - - - - - -	10	9	1	9	------	1	------	------
AND-MOLINE - - - -	112	105	4	105	------	1	------	------
- - - - - - - - - -	76	71	1	68	------	------	------	------
- - - - - - - - - -	1,210	1,056	80	1,039	6	5	------	16
- - - - - - - - - -	312	273	21	269	1	1	------	5
- - - - - - - - - -	116	101	12	101	------	2	------	1
CHICAGO - - - - - -	150	127	13	125	1	------	------	2
- - - - - - - - - -	269	244	12	243	------	2	------	2
- - - - - - - - - -	31	28	2	27	1	------	------	------
- - - - - - - - - -	78	64	8	61	1	------	------	3
- - - - - - - - - -	22	16	2	16	------	------	------	1
AYETTE - - - - - -	113	95	3	90	2	------	------	1
- - - - - - - - - -	32	30	2	30	------	------	------	------
- - - - - - - - - -	2	1	1	1	------	------	------	------
- - - - - - - - - -	70	64	3	63	------	------	------	1
- - - - - - - - - -	15	13	1	13	------	------	------	------
- - - - - - - - - -	585	517	29	508	2	3	1	14
- - - - - - - - - -	227	192	18	186	1	3	1	5
- - - - - - - - - -	87	78	3	78	------	------	------	3
- - - - - - - - - -	72	69	1	67	1	------	------	------
- - - - - - - - - -	37	35	2	35	------	------	------	------
- - - - - - - - - -	61	55	3	54	------	------	------	1
- - - - - - - - - -	14	12	------	12	------	------	------	------
AND-MOLINE - - -	81	72	1	72	------	------	------	5
- - - - - - - - - -	6	4	1	4	------	------	------	------
- - - - - - - - - -	442	371	28	361	2	7	1	12
- - - - - - - - - -	143	122	7	116	2	1	1	2
- - - - - - - - - -	38	32	1	31	------	------	------	------
- - - - - - - - - -	116	95	9	94	------	6	------	8
- - - - - - - - - -	145	122	11	120	------	------	------	2
- - - - - - - - - -	378	322	31	318	1	2	------	7
- - - - - - - - - -	116	102	11	100	------	1	------	1
- - - - - - - - - -	76	70	1	69	------	------	------	2
- - - - - - - - - -	19	12	3	12	------	------	------	1
- - - - - - - - - -	3	1	2	1	------	------	------	------
) - - - - - - - - -	13	9	2	9	------	------	------	------
- - - - - - - - - -	151	128	12	127	1	1	------	3

1971 EMPLOYMENT SURVEY - ENGINEE
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SU

XXX. SMSA, 1971 - CONTINUED	TOTAL	M
LOUISIANA	744	681
LOUISIANA, OTHER	106	95
BATON ROUGE	141	130
LAKE CHARLES	39	37
MONROE	16	15
NEW ORLEANS	329	302
SHREVEPORT	63	55
LAFAYETTE	50	47
MAINE	162	130
MAINE, OTHER	134	107
LEWISTON-AUBURN	5	5
PORTLAND	23	18
MARYLAND	1,857	1,621
MARYLAND, OTHER	103	85
BALTIMORE	782	685
WASHINGTON	966	846
WILMINGTON	6	5
MASSACHUSETTS	2,408	2,018
MASSACHUSETTS, OTHER	351	285
BOSTON	1,516	1,275
BROCKTON	30	25
FITCHBURG-LEOMINSTER	21	16
LOWELL	67	59
NEW BEDFORD	29	27
PITTSFIELD	52	47
WORCESTER	117	103
SPRINGFIELD-CHICOPEE-HOLYOKE	105	84
FALL RIVER	8	7
LAWRENCE-HAVERHILL	73	58
PROVIDENCE-PAWTUCKET-WARWICK	39	32
MICHIGAN	2,280	1,980
MICHIGAN, OTHER	351	300
ANN ARBOR	162	137
BAY CITY	12	12
DETROIT	1,263	1,099
FLINT	99	90
GRAND RAPIDS	103	86
JACKSON	85	75
KALAMAZOO	37	32
LANSING	84	74
MUSKEGON-MUSKEGON HEIGHTS	38	36
SAGINAW	37	31
TOLEDO	9	8

1971 EMPLOYMENT SURVEY - ENGINEERS

STICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
	744	681	31	672	3	2	------	------
	106	95	7	95	------	1	------	10
	141	130	6	128	------	1	------	------
	39	37	2	36	------	------	------	2
	16	15	1	15	------	------	------	------
	329	302	11	297	3	------	------	------
	63	55	3	55	------	------	------	5
	50	47	1	46	------	------	------	1
	162	130	8	129	------	1	1	2
	134	107	4	106	------	1	------	4
	5	5	------	5	------	------	------	4
	23	18	4	18	------	------	1	------
	1,857	1,621	85	1,600	6	4	1	------
	103	85	5	83	------	------	1	29
	782	685	27	676	3	------	------	3
	966	846	53	836	3	4	------	10
	6	5	------	5	------	------	------	16
	2,408	2,018	151	1,976	11	15	5	------
	351	285	23	281	1	3	1	98
	1,516	1,275	95	1,247	7	8	4	14
	30	25	1	24	------	------	------	65
	21	16	1	16	------	------	------	2
	67	59	5	59	------	------	------	1
	29	27	1	27	------	------	------	1
	52	47	4	47	------	------	------	------
	117	103	5	100	------	2	------	------
OLYOKE	105	84	10	79	2	------	------	3
	8	7	------	7	------	------	------	3
	73	58	2	57	1	------	------	------
ARWICK	39	32	4	32	------	2	------	7
	2,280	1,980	128	1,947	12	10	------	2
	351	300	19	291	4	1	------	45
	162	137	6	127	5	------	------	7
	12	12	------	12	------	------	------	6
	1,263	1,099	75	1,091	3	9	------	------
	99	90	3	88	------	------	------	23
	103	86	9	85	------	------	------	2
	85	75	4	74	------	------	------	5
	37	32	3	32	------	------	------	------
	84	74	3	73	------	------	------	2
HTS	38	36	2	35	------	------	------	------
	37	31	3	31	------	------	------	------
	9	8	1	8	------	------	------	------

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

XXX. SMSA, 1971 - CONTINUED	TOTAL	POPULAT W	X	P
MINNESOTA	840	711	69	7
MINNESOTA, OTHER	138	111	19	1
MINNEAPOLIS-ST PAUL	638	548	44	5
DULUTH-SUPERIOR	61	52	4	
FARGO-MOORHEAD	3	------	2	----
MISSISSIPPI	241	209	12	2
MISSISSIPPI, OTHER	176	154	10	1
JACKSON	50	43	2	
BILOXI-GULFPORT	15	12	------	
MISSOURI	1,186	1,004	71	9
MISSOURI, OTHER	193	149	12	1
ST JOSEPH	2	2	------	
SPRINGFIELD	10	6	2	
KANSAS CITY	260	230	12	2
ST LOUIS	721	617	45	6
MONTANA	110	93	8	
MONTANA, OTHER	80	67	8	
BILLINGS	22	20	------	
GREAT FALLS	8	6	------	
NEBRASKA	281	242	18	2
NEBRASKA, OTHER	55	44	8	
LINCOLN	62	53	3	
SIOUX CITY	1	------	1	----
OMAHA	163	145	6	1
NEVADA	138	116	8	1
NEVADA, OTHER	23	18	2	
LAS VEGAS	72	64	2	
RENO	43	34	4	
NEW HAMPSHIRE	243	206	15	2
NEW HAMPSHIRE, OTHER	211	176	14	1
MANCHESTER	22	20	1	
LAWRENCE	10	10	------	
NEW JERSEY	3,142	2,649	198	2,6
NEW JERSEY, OTHER	791	675	48	6
ATLANTIC CITY	26	18	4	
JERSEY CITY	73	57	6	
NEWARK	1,099	940	63	9
PATERSON-CLIFTON-PASSAIC	580	477	47	4
TRENTON	189	156	10	1
VINELAND-MILLVILLE-BRIDGETON	8	8	------	
ALLENTOWN	18	16	1	
PHILADELPHIA	343	288	18	2
WILMINGTON	15	14	1	

EMPLOYMENT SURVEY - ENGINEERS
F ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - -	840	711	69	701	3	5	1	25
- - - -	138	111	19	111	------	------	------	2
- - - -	638	548	44	538	3	5	------	21
- - - -	61	52	4	52	------	------	------	1
- - - -	3	------	2	------	------	------	1	1
- - - -	241	209	12	205	2	1	------	5
- - - -	176	154	10	150	2	1	------	3
- - - -	50	43	2	43	------	------	------	2
- - - -	15	12	------	12	------	------	------	------
- - - -	1,186	1,004	71	991	6	8	------	24
- - - -	193	149	12	146	2	1	------	7
- - - -	2	2	------	2	------	------	------	------
- - - -	10	6	2	6	------	1	------	------
- - - -	260	230	12	229	1	1	------	2
- - - -	721	617	45	608	3	5	------	15
- - - -	110	93	8	90	------	------	------	1
- - - -	80	67	8	64	------	------	------	1
- - - -	22	20	------	20	------	------	------	------
- - - -	8	6	------	6	------	------	------	------
- - - -	281	242	18	242	------	3	------	1
- - - -	55	44	8	44	------	2	------	------
- - - -	62	53	3	53	------	1	------	1
- - - -	1	------	1	------	------	------	------	------
- - - -	163	145	6	145	------	------	------	------
- - - -	138	116	8	113	3	1	1	4
- - - -	23	18	2	18	------	------	------	2
- - - -	72	64	2	63	1	1	------	2
- - - -	43	34	4	32	2	------	1	------
- - - -	243	206	15	201	3	3	2	6
- - - -	211	176	14	173	2	2	2	6
- - - -	22	20	1	19	------	1	------	------
- - - -	10	10	------	9	1	------	------	------
- - - -	3,142	2,649	198	2,610	9	30	6	100
- - - -	791	675	48	666	2	5	2	19
- - - -	26	18	4	18	------	------	------	------
- - - -	73	57	6	55	------	1	1	7
- - - -	1,099	940	63	926	3	8	1	24
- - - -	580	477	47	468	2	8	2	32
- - - -	189	156	10	152	1	3	------	5
- - - -	8	8	------	8	------	------	------	------
- - - -	18	16	1	16	------	------	------	1
- - - -	343	288	18	287	1	4	------	12
- - - -	15	14	1	14	------	1	------	------

1971 EMPLOYMENT SURVEY -
CHARACTERISTICS OF ENGINEERS IN EMPLOY

XXX. SMSA, 1971 - CONTINUED	TOTAL	
NEW MEXICO	419	
NEW MEXICO, OTHER	187	
ALBUQUERQUE	232	
NEW YORK	5,338	4,
NEW YORK, OTHER	654	
ALBANY-SCHENECTADY-TROY	420	
BUFFALO	406	
NEW YORK	2,876	2,
ROCHESTER	424	
SYRACUSE	285	
UTICA-ROME	123	
BINGHAMTON	150	
NORTH CAROLINA	744	
NORTH CAROLINA, OTHER	170	
ASHEVILLE	31	
CHARLOTTE	148	
DURHAM	50	
GREENSBORO-WINSTON SALEM-HIGH POINT	163	
RALEIGH	140	
WILMINGTON	26	
FAYETTEVILLE	16	
NORTH DAKOTA	57	
NORTH DAKOTA, OTHER	43	
FARGO-MOORHEAD	14	
OHIO	3,158	2,
OHIO, OTHER	323	
AKRON	227	
CANTON	121	
CLEVELAND	801	
COLUMBUS	375	
DAYTON	457	
HAMILTON-MIDDLETOWN	46	
LIMA	34	
LORAIN-ELYRIA	39	
SPRINGFIELD	30	
YOUNGSTOWN-WARREN	85	
MANSFIELD	18	
TOLEDO	194	
CINCINNATI	387	
HUNTINGTON-ASHLAND	2	
STEUBENVILLE-WEIRTON	10	
WHEELING	9	

1971 EMPLOYMENT SURVEY - ENGINEERS

ARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

NTINUED	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - -	419	356	15	348	3	------	1	14
THER - - - - - - - - - -	187	159	6	154	1	------	------	6
- - - - - - - - - - - -	232	197	9	194	2	------	1	8
- - - - - - - - - - - -	5,338	4,432	428	4,368	23	48	14	163
ER - - - - - - - - - - -	654	548	42	541	3	2	------	21
CTADY-TROY - - - - - - -	420	359	23	355	------	1	1	5
- - - - - - - - - - - -	406	344	29	338	2	3	2	15
- - - - - - - - - - - -	2,876	2,329	272	2,290	13	32	10	101
- - - - - - - - - - - -	424	356	33	355	1	6	------	13
- - - - - - - - - - - -	285	251	13	247	3	2	1	5
- - - - - - - - - - - -	123	113	7	111	------	2	------	1
- - - - - - - - - - - -	150	132	9	131	1	------	------	2
- - - - - - - - - - - -	744	643	52	635	1	4	------	7
, OTHER - - - - - - - -	170	143	15	142	1	2	------	1
- - - - - - - - - - - -	31	25	------	24	------	------	------	------
- - - - - - - - - - - -	148	131	9	130	------	1	------	2
- - - - - - - - - - - -	50	39	4	37	------	------	------	2
ISTON SALEM-HIGH POINT	163	148	10	147	------	------	------	------
- - - - - - - - - - - -	140	121	10	121	------	------	------	2
- - - - - - - - - - - -	26	24	2	23	------	------	------	------
- - - - - - - - - - - -	16	12	2	11	------	1	------	------
- - - - - - - - - - - -	57	51	4	51	------	------	------	------
OTHER - - - - - - - - -	43	37	4	37	------	------	------	------
- - - - - - - - - - - -	14	14	------	14	------	------	------	------
- - - - - - - - - - - -	3,158	2,777	195	2,748	16	11	7	58
- - - - - - - - - - - -	323	276	29	275	1	3	2	6
- - - - - - - - - - - -	227	208	12	207	------	------	2	2
- - - - - - - - - - - -	121	103	10	103	------	1	------	3
- - - - - - - - - - - -	801	705	51	697	5	4	------	17
- - - - - - - - - - - -	375	334	15	329	2	1	------	8
- - - - - - - - - - - -	457	420	11	415	4	------	1	4
ETOWN - - - - - - - - -	46	37	5	36	------	1	------	1
- - - - - - - - - - - -	34	31	2	31	------	------	1	1
- - - - - - - - - - - -	39	34	3	33	------	------	------	1
- - - - - - - - - - - -	30	27	1	27	------	------	------	1
REN - - - - - - - - - -	85	73	8	73	------	------	------	2
- - - - - - - - - - - -	18	17	------	17	------	------	------	------
- - - - - - - - - - - -	194	168	15	166	1	------	------	2
- - - - - - - - - - - -	387	325	31	320	3	1	1	10
LAND - - - - - - - - -	2	2	------	2	------	------	------	------
EIRTON - - - - - - - -	10	10	------	10	------	------	------	------
- - - - - - - - - - - -	9	7	2	7	------	------	------	------

XXX. SMSA, 1971 - CONTINUED	TOTAL	W	P
OKLAHOMA	657	559	
OKLAHOMA, OTHER	182	151	
LAWTON	6	4	
OKLAHOMA CITY	214	178	
TULSA	251	222	
FORT SMITH	4	4	--
OREGON	437	346	
OREGON, OTHER	102	80	
EUGENE	13	9	
SALEM	21	17	
PORTLAND	301	240	
PENNSYLVANIA	3,971	3,406	
PENNSYLVANIA, OTHER	441	364	
ALTOONA	12	9	
ERIE	121	102	
HARRISBURG	130	109	
JOHNSTOWN	30	23	
LANCASTER	84	68	
PITTSBURGH	1,228	1,099	
READING	103	97	
SCRANTON	26	18	
WILKES-BARRE-HAZLETON	38	34	--
YORK	95	75	
BINGHAMTON	2	2	--
ALLENTOWN-BETHLEHEM-EASTON	251	207	
PHILADELPHIA	1,410	1,199	
RHODE ISLAND	199	158	
RHODE ISLAND, OTHER	58	45	
FALL RIVER	2	1	--
PROVIDENCE-PAWTUCKET-WARWICK	139	112	
SOUTH CAROLINA	401	343	
SOUTH CAROLINA, OTHER	163	135	
CHARLESTON	73	62	
COLUMBIA	67	56	
GREENVILLE	68	62	
AUGUSTA	30	28	
SOUTH DAKOTA	72	64	
SOUTH DAKOTA, OTHER	64	57	
SIOUX FALLS	8	7	
TENNESSEE	839	738	
TENNESSEE, OTHER	256	234	
KNOXVILLE	231	207	
NASHVILLE	126	101	
MEMPHIS	118	102	
CHATTANOOGA	108	94	

1971 EMPLOYMENT SURVEY - ENGINEERS

HARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
ONTINUED								
	657	559	51	547	6	4	1	12
HER	182	151	10	145	2	1	1	4
	6	4	1	4	------	------	------	1
Y	214	178	22	175	2	2	------	4
	251	222	10	219	2	1	------	3
	4	4	------	4	------	------	------	------
	437	346	31	340	2	6	------	12
R	102	80	8	78	------	2	------	4
	13	9	3	9	------	------	------	------
	21	17	1	17	------	------	------	1
	301	240	19	236	2	4	------	7
	3,971	3,406	223	3,348	26	25	5	102
, OTHER	441	364	37	357	------	6	1	12
	12	9	1	9	------	------	------	------
	121	102	6	102	------	1	------	5
	130	109	9	105	2	2	------	2
	30	23	2	22	1	------	------	3
	84	68	6	68	------	1	------	2
	1,228	1,099	50	1,085	11	------	1	17
	103	97	4	95	1	------	1	------
	26	18	1	17	1	------	------	2
-HAZLETON	38	34	------	31	------	------	------	1
	95	75	9	73	------	------	------	3
	2	2	------	2	------	------	------	------
THLEHEM-EASTON	251	207	20	202	3	3	------	4
	1,410	1,199	78	1,180	7	12	2	51
	199	158	18	156	------	1	------	7
, OTHER	58	45	6	45	------	1	------	1
	2	1	------	1	------	------	------	------
AWTUCKET-WARWICK	139	112	12	110	------	------	------	6
	401	343	27	339	1	3	------	7
NA, OTHER	163	135	8	133	1	1	------	5
	73	62	7	61	------	1	------	1
	67	56	6	55	------	1	------	1
	68	62	5	62	------	------	------	------
	30	28	1	28	------	------	------	------
	72	64	4	62	1	1	------	------
, OTHER	64	57	3	55	1	1	------	------
	8	7	1	7	------	------	------	------
	839	738	47	729	5	1	1	12
THER	256	234	13	232	1	------	1	2
	231	207	10	204	2	------	------	3
	126	101	9	100	1	------	------	6
	118	102	7	100	1	1	------	1
	108	94	8	93	------	------	------	------

1971 EMPLOYMENT SURVEY - ENGINEER
CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SUR

XXX. SMSA, 1971 - CONTINUED	TOTAL	W
TEXAS	3,293	2,879
TEXAS, OTHER	324	269
ABILENE	10	9
AMARILLO	44	42
AUSTIN	138	120
BEAUMONT-PORT ARTHUR-ORANGE	101	87
BROWNSVILLE-HARLINGEN-SAN BENITO	5	3
CORPUS CHRISTI	93	88
DALLAS	658	578
EL PASO	86	67
FORT WORTH	277	239
GALVESTON-TEXAS CITY	61	56
HOUSTON	1,113	987
LAREDO	2	2
LUBBOCK	32	27
MIDLAND	98	89
ODESSA	19	18
SAN ANGELO	5	4
SAN ANTONIO	143	124
TYLER	19	18
WACO	15	13
WICHITA FALLS	18	14
MCALLEN-PHARR-EDINBURG	8	4
SHERMAN-DENISON	13	11
TEXARKANA	11	10
UTAH	277	234
UTAH, OTHER	49	46
OGDEN	16	14
PROVO-OREM	25	17
SALT LAKE CITY	187	157
VERMONT	115	93
VERMONT, OTHER	115	93
VIRGINIA	1,693	1,474
VIRGINIA, OTHER	272	229
LYNCHBURG	42	41
NEWPORT NEWS-HAMPTON	160	149
NORFOLK-PORTSMOUTH	125	104
RICHMOND	167	146
ROANOKE	48	39
WASHINGTON	879	766

1971 EMPLOYMENT SURVEY - ENGINEERS

CHARACTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

CONTINUED	POPULATION							
	TOTAL	W	X	P	N	S	U	G
- - - - - - - - - - - -	3,293	2,879	215	2,833	17	27	3	67
ER - - - - - - - - - - -	324	269	27	258	6	4	------	5
- - - - - - - - - - - -	10	9	1	9	------	------	------	------
- - - - - - - - - - - -	44	42	1	41	------	------	------	------
- - - - - - - - - - - -	138	120	8	114	1	2	2	4
ORT ARTHUR-ORANGE - - - -	101	87	5	87	------	------	------	3
E-HARLINGEN-SAN BENITO -	5	3	1	3	------	------	------	------
ISTI - - - - - - - - - -	93	88	2	87	1	------	------	2
- - - - - - - - - - - -	658	578	42	573	3	5	------	17
- - - - - - - - - - - -	86	67	7	65	------	------	------	5
- - - - - - - - - - - -	277	239	19	236	------	4	1	10
TEXAS CITY - - - - - - -	61	56	2	55	------	------	------	2
- - - - - - - - - - - -	1,113	987	74	978	4	7	------	13
- - - - - - - - - - - -	2	2	------	2	------	------	------	------
- - - - - - - - - - - -	32	27	5	25	1	------	------	------
- - - - - - - - - - - -	98	89	6	88	------	------	------	2
- - - - - - - - - - - -	19	18	1	17	------	------	------	------
- - - - - - - - - - - -	5	4	1	4	------	------	------	------
) - - - - - - - - - - -	143	124	8	122	1	4	------	3
- - - - - - - - - - - -	19	18	------	17	------	------	------	------
- - - - - - - - - - - -	15	13	2	13	------	------	------	------
LS - - - - - - - - - - -	18	14	2	14	------	1	------	------
RR-EDINBURG - - - - - -	8	4	1	4	------	------	------	------
ISON - - - - - - - - - -	13	11	------	11	------	------	------	1
- - - - - - - - - - - -	11	10	------	10	------	------	------	------
- - - - - - - - - - - -	277	234	25	228	3	3	------	8
- - - - - - - - - - - -	49	46	3	45	------	------	------	------
- - - - - - - - - - - -	16	14	2	13	------	1	------	------
- - - - - - - - - - - -	25	17	7	16	1	------	------	1
ITY - - - - - - - - - -	187	157	13	154	2	2	------	7
- - - - - - - - - - - -	115	93	9	92	------	------	1	2
HER - - - - - - - - - -	115	93	9	92	------	------	1	2
- - - - - - - - - - - -	1,693	1,474	108	1,454	6	8	2	22
THER - - - - - - - - - -	272	229	18	220	3	------	------	3
- - - - - - - - - - - -	42	41	1	41	------	------	------	------
S-HAMPTON - - - - - - -	160	149	6	147	------	------	------	1
TSMOUTH - - - - - - - -	125	104	12	104	------	1	------	2
- - - - - - - - - - - -	167	146	10	146	------	1	------	1
- - - - - - - - - - - -	48	39	4	39	------	------	------	------
- - - - - - - - - - - -	879	766	57	757	3	6	2	15

	TOTAL	W
XXX. SMSA, 1971 - CONTINUED		
WASHINGTON	1,179	965
WASHINGTON, OTHER	242	211
SEATTLE-EVERETT	807	655
SPOKANE	51	43
TACOMA	54	33
PORTLAND	25	23
WEST VIRGINIA	300	268
WEST VIRGINIA, OTHER	129	113
CHARLESTON	118	105
HUNTINGTON-ASHLAND	36	35
STEUBENVILLE-WEIRTON	8	7
WHEELING	9	8
WISCONSIN	1,066	920
WISCONSIN, OTHER	232	195
GREEN BAY	25	24
KENOSHA	17	15
MADISON	144	125
MILWAUKEE	576	502
RACINE	69	57
DULUTH-SUPERIOR	3	2
WYOMING	90	82
WYOMING, OTHER	90	82
CANAL ZONE	1	1
CANAL ZONE, OTHER	1	1
PUERTO RICO	115	100
PUERTO RICO, OTHER	15	10
MAYAGUEZ	13	12
PONCE	18	16
SAN JUAN	69	62
VIRGIN ISLAND	3	2
VIRGIN ISLAND, OTHER	3	2
GUAM	3	3
GUAM, OTHER	3	3
FOREIGN	116	95
XXXI. PART-TIME, SEEKING FULL-TIME EMPLOYMENT		
YES	420	294
NO	400	345
NO REPORT	237	190

1971 EMPLOYMENT SURVEY - ENGINEERS

CTERISTICS OF ENGINEERS IN EMPLOYMENT SURVEY--CONTINUED

	POPULATION							
	TOTAL	W	X	P	N	S	U	G
NUED								
- - - - - - - - - -	1,179	965	61	939	12	9	2	81
R - - - - - - - - -	242	211	8	206	1	1	------	9
- - - - - - - - - -	807	655	39	636	10	4	2	69
- - - - - - - - - -	51	43	3	41	1	1	------	------
- - - - - - - - - -	54	33	11	33	------	3	------	3
- - - - - - - - - -	25	23	------	23	------	------	------	------
- - - - - - - - - -	300	268	15	265	------	1	------	2
THER - - - - - - -	129	113	8	112	------	1	------	1
- - - - - - - - - -	118	105	6	104	------	------	------	1
ND - - - - - - - -	36	35	------	34	------	------	------	------
RTON - - - - - - -	8	7	1	7	------	------	------	------
- - - - - - - - - -	9	8	------	8	------	------	------	------
- - - - - - - - - -	1,066	920	67	904	2	7	1	28
- - - - - - - - -	232	195	22	194	------	3	------	3
- - - - - - - - - -	25	24	------	22	------	------	------	1
- - - - - - - - - -	17	15	1	15	------	------	------	1
- - - - - - - - - -	144	125	9	118	------	1	------	1
- - - - - - - - - -	576	502	31	496	2	3	1	18
- - - - - - - - - -	69	57	3	57	------	------	------	4
- - - - - - - - - -	3	2	1	2	------	------	------	------
- - - - - - - - - -	90	82	5	80	------	1	------	------
- - - - - - - - - -	90	82	5	80	------	1	------	------
- - - - - - - - - -	1	1	------	1	------	------	------	------
R - - - - - - - - -	1	1	------	1	------	------	------	------
- - - - - - - - - -	115	100	11	99	------	------	------	1
ER - - - - - - - -	15	10	3	10	------	------	------	------
- - - - - - - - - -	13	12	1	12	------	------	------	------
- - - - - - - - - -	18	16	1	16	------	------	------	1
- - - - - - - - - -	69	62	6	61	------	------	------	------
- - - - - - - - - -	3	2	------	2	------	------	------	------
THER - - - - - - -	3	2	------	2	------	------	------	------
- - - - - - - - - -	3	3	------	3	------	------	------	------
- - - - - - - - - -	3	3	------	3	------	------	------	------
- - - - - - - - - -	116	95	12	93	1	1	------	2
FULL-TIME								
- - - - - - - - - -	420	294	126	------	294	------	90	------
- - - - - - - - - -	400	345	55	------	------	------	------	------
- - - - - - - - - -	237	190	47	------	------	------	------	------

OMB NO. 099-S71001
Approval Expires October 1971

National Science Foundation

SURVEY OF ENGINEERING EMPLOYMENT

Conducted by the
Engineers Joint Council
345 East 47th Street, New York, N.Y. 10017

PLEASE PRINT ANSWERS IN DARK INK OR TYPE

If your name or address is incorrect, please enter correct information below:
Please give full name

.....

.....

.....

.....

.....

.....

Your response will be held in strict confidence—no individual will be identified and only statistical summaries will be released.

1. Date of Birth ..... Month Day Year

2. Citizenship ☐ 1—USA ☐ 2—Non-USA

3. Sex ☐ 1—Male ☐ 2—Female

4. What is your highest earned college degree? ☐ 1—None ☐ 2—Associate ☐ 3—Bachelor ☐ 4—Master ☐ 5—Doctor

5. Give the year of graduation for your first earned degree and year of graduation of highest earned degree (if different than the first) and check the appropriate curriculum for each degree. First degree year.....Highest degree year.....

FIRST DEGREE	HIGHEST DEGREE		FIRST DEGREE	HIGHEST DEGREE	
☐	☐	01 Aerospace Engineering	☐	☐	16 Management/ Business Administration
☐	☐	02 Agricultural Engineering	☐	☐	17 Manufacturing Engineering
☐	☐	03 Automation/ Control	☐	☐	18 Mechanical Engineering
☐	☐	04 Chemical Engineering	☐	☐	19 Metallurgical Engineering
☐	☐	05 Civil Engineering	☐	☐	20 Mining Engineering
☐	☐	06 Communications	☐	☐	21 Naval Arch/ Marine Engineering
☐	☐	07 Computer/ Mathematics	☐	☐	22 Nuclear Engineering
☐	☐	08 Education	☐	☐	23 Petroleum Engineering
☐	☐	09 Electrical Engineering	☐	☐	24 Plant/ Facilities Engineering
☐	☐	10 Electronics Engineering	☐	☐	25 Product Engineering
☐	☐	11 Engineering (general)	☐	☐	26 Science (basic)
☐	☐	12 Engineering Sciences	☐	☐	27 Systems Engineering
☐	☐	13 Environmental/ Sanitary Engineering	☐	☐	28 Transportation Engineering
☐	☐	14 Geological Engineering	☐	☐	29 Other Engineering.....
☐	☐	15 Industrial Engineering	☐	☐	30 Other Nonengineering.....

6. If you are a student, check your status. ☐ 1—Student, full-time ☐ 2—Student, part-time

1. Date of Birth ..... Month Day Year

2. Citizenship ☐ 1—USA ☐ 2—Non-USA

3. Sex ☐ 1—Male ☐ 2—Female

4. What is your highest earned college degree? ☐ 1—None ☐ 2—Associate ☐ 3—Bachelor ☐ 4—Master ☐ 5—Doctor

5. Give the year of graduation for your first earned degree and year of graduation of highest earned degree (if different than the first) and check the appropriate curriculum for each degree. First degree year .....Highest degree year.....

FIRST DEGREE	HIGHEST DEGREE		FIRST DEGREE	HIGHEST DEGREE	
☐	☐	01 Aerospace Engineering	☐	☐	16 Management/ Business Administration
☐	☐	02 Agricultural Engineering	☐	☐	17 Manufacturing Engineering
☐	☐	03 Automation/ Control	☐	☐	18 Mechanical Engineering
☐	☐	04 Chemical Engineering	☐	☐	19 Metallurgical Engineering
☐	☐	05 Civil Engineering	☐	☐	20 Mining Engineering
☐	☐	06 Communications	☐	☐	21 Naval Arch/ Marine Engineering
☐	☐	07 Computer/ Mathematics	☐	☐	22 Nuclear Engineering
☐	☐	08 Education	☐	☐	23 Petroleum Engineering
☐	☐	09 Electrical Engineering	☐	☐	24 Plant/ Facilities Engineering
☐	☐	10 Electronics Engineering	☐	☐	25 Product Engineering
☐	☐	11 Engineering (general)	☐	☐	26 Science (basic)
☐	☐	12 Engineering Sciences	☐	☐	27 Systems Engineering
☐	☐	13 Environmental/ Sanitary Engineering	☐	☐	28 Transportation Engineering
☐	☐	14 Geological Engineering	☐	☐	29 Other Engineering.....
☐	☐	15 Industrial Engineering	☐	☐	30 Other Nonengineering.....

6. If you are a student, check your status. ☐ 1—Student, full-time ☐ 2—Student, part-time

7. Are you registered by a state board of engineering examiners? ☐ 1—Yes, PE ☐ 2—Yes, EIT ☐ 3—No

8. Check current employment status.

EMPLOYED FULL-TIME:
☐ 1—Engineering related
☐ 2—Nonengineering related

EMPLOYED PART-TIME:
☐ 3—Engineering related
☐ 4—Nonengineering related

If you are *employed part-time*, are you seeking full-time employment?
☐ 1—Yes ☐ 2—No

☐ 5—Unemployed and seeking employment ☐ 6—Not employed and not seeking employment ☐ 7—Retired

9. When did you begin this employment status?.....(month).....(year). If you are **NOT EMPLOYED AND NOT SEEKING EMPLOYMENT** or are **RETIRED** and not seeking employment, please mail this questionnaire to Engineers Joint Council and do not proceed further; all others please continue.

10. Have you been unemployed at any time since March 1, 1970? ☐ 1—Yes ☐ 2—No If yes, how many weeks?.....

11a. If you are employed in an ***engineering related position,*** answer items 12-18 in terms of your *present employment.*

11b. If you are employed in a **nonengineering related position,** what kind of work are you now doing?.....
Please indicate the MOST important reason for currently being in a nonengineering related position. (check only one)
☐ 1—I am not an engineer (do not proceed further, please return questionnaire to EJC)
☐ 2—Prefer nonengineering related position
☐ 3—Promoted out of engineering
☐ 4—Pay is better
☐ 5—Locational preference
☐ 6—Length of time away from engineering
☐ 7—Engineering related position not available
☐ 8—Other
Please give actual location of your employment .....
..... When did you leave your last (city) (state)
engineering related position?..... (month) (year)
Answer items 12-17 in terms of your *last engineering related employment,* and also answer item 18.

11c. If you are **unemployed and seeking employment** what type of position are you seeking?
☐ 1—Full-time
☐ 2—Part-time
☐ 3—Temporary

Answer items 12-17 in terms of your *last engineering related employment,* then skip to item 19.

12. Check the box of the category which is most appropriate for your principal employer in your present (or last engineering related) position. (check only one)
☐ 0—Private Industry or Business
☐ 1—Self-employed
☐ 2—College or University
☐ 3—Junior College or Technical Institute
☐ 4—Secondary, Elementary, or other school
☐ 5—Nonprofit organization, other than a school
☐ 6—Federal Government—Civilian Employee
☐ 7—Military Service, CC of USPHS or NOAA
☐ 8—State Government
☐ 9—Local Government
☐ 10—Other (specify) .....

13. Please give actual location of your present (or last engineering related) employment. ..... (city) (state)

ment (check *only one term* from each list).

FIELD OF SPECIALIZATION

- ☐ 01 Aerospace Engineering
- ☐ 02 Agricultural Engineering
- ☐ 03 Automation/ Control
- ☐ 04 Chemical Engineering
- ☐ 05 Civil Engineering
- ☐ 06 Communications
- ☐ 07 Computer/ Mathematics
- ☐ 08 Education (general)
- ☐ 09 Electrical Engineering
- ☐ 10 Electronic Engineering
- ☐ 11 Engineering (general)
- ☐ 12 Engineering Sciences
- ☐ 13 Environmental/ Sanitary Engineering
- ☐ 14 Geological Engineering
- ☐ 15 Industrial Engineering
- ☐ 16 Management/ Business Administration
- ☐ 17 Manufacturing Engineering
- ☐ 18 Mechanical Engineering
- ☐ 19 Metallurgical Engineering
- ☐ 20 Mining Engineering
- ☐ 21 Naval Arch/ Marine Engineering
- ☐ 22 Nuclear Engineering
- ☐ 23 Petroleum Engineering
- ☐ 24 Plant/ Facilities Engineering
- ☐ 25 Product Engineering
- ☐ 26 Science (basic)
- ☐ 27 Systems Engineering
- ☐ 28 Transportation Engineering
- ☐ 29 Other Engineering
- ☐ 30 Other Nonengineering

PRODUCT OR SERVICE AREA

- ☐ 01 Agriculture and Food
- ☐ 02 Aircraft and Space
- ☐ 03 Ceramics
- ☐ 04 Chemicals/Allied Products
- ☐ 05 Communications Services
- ☐ 06 Computers
- ☐ 07 Construction/ Civil Engineering
- ☐ 08 Education & Information Services
- ☐ 09 Electrical Equipment
- ☐ 10 Electronic Equipment
- ☐ 11 Machinery/ Mechanical Equipment
- ☐ 12 Marine Transportation
- ☐ 13 Metals (basic)
- ☐ 14 Metal Fabricated Products
- ☐ 15 Mining
- ☐ 16 Motor Vehicles
- ☐ 17 Ordnance
- ☐ 18 Petroleum
- ☐ 19 Rail Transportation
- ☐ 20 Utilities
- ☐ 21 Other

JOB FUNCTION

Check your principal job function below. If you are (were) a *manager* of this function, check this box ☐ in addition to the function below.

- ☐ 01 Administration
- ☐ 02 Consultation
- ☐ 03 Construction
- ☐ 04 Design
- ☐ 05 Development
- ☐ 06 Engineering (general)
- ☐ 07 Planning
- ☐ 08 Production
- ☐ 09 Research
- ☐ 10 Sales and Service
- ☐ 11 Teaching
- ☐ 12 Other

15. Which area is (was) a major portion of your work related to? *(check only one)*

- ☐ 1—Health
- ☐ 2—Public Works
- ☐ 3—Urban Development
- ☐ 4—Pollution
- ☐ 5—Defense
- ☐ 6—Space
- ☐ 7 -Transportation
- ☐ 8—Atomic Energy
- ☐ 9—Industrial Products/ Processes
- ☐ 10—Education
- ☐ 11—Consumer Products
- ☐ 12—Other (specify).....

16. Is (was) any of your work supported or sponsored by U.S. Government funds? ☐ 1—Yes ☐ 2—No ☐ 3—Don't know

17. If yes, indicate the approximate part of Government support.

☐ 4 1%-25% ☐ 5 26%-50% ☐ 6 51%-75% ☐ 7 76%-100% ☐ 8 Don't know

The following item is to be answered only by *full-time or part-time employed* individuals.

18. Check if you have received notice that your position will terminate prior to ☐ 1—July 1, 1971, ☐ 2—Jan. 1, 1972, or ☐ 3—July 1, 1972. (Do not report planned voluntary retirement.)

NOTE: **Answer items 19-24 in terms of your employment situation as of March 1970,** about fourteen months ago. Information for that period is needed to establish a bench mark for changes that have taken place since then.

19. Check **March 1970** employment status.

EMPLOYED FULL-TIME:
- ☐ 1—Engineering related
- ☐ 2—Nonengineering related

EMPLOYED PART-TIME:
- ☐ 3—Engineering related
- ☐ 4—Nonengineering related

- ☐ 5—Unemployed and seeking employment
- ☐ 6—Not employed and not seeking employment
- ☐ 7—Retired

If as of March 1970, you were NOT EMPLOYED AND NOT SEEKING EMPLOYMENT or were RETIRED, please mail questionnaire to the Engineers Joint Council and do not proceed further; all others please continue.

20. Check the box of the category which is most appropriate for your **March 1970** principal employer (check only one).

- ☐ 0—Private Industry or Business
- ☐ 1—Self-employed
- ☐ 2—College or University
- ☐ 3—Junior College or Technical Institute
- ☐ 4—Secondary, Elementary or other school
- ☐ 5—Nonprofit Organization, other than a school
- ☐ 6—Federal Government—Civilian Employee
- ☐ 7—Military Service, CC of USPHS or NOAA
- ☐ 8—State Government
- ☐ 9—Local Government
- ☐ 10—Other (specify).....

21. Please give location of your **March 1970** employment

☐ 3—Urban Development ☐ 7—Transportation ☐ 11—Consumer Products
☐ 4—Pollution ☐ 8—Atomic Energy ☐ 12—Other (specify).....

16. Is (was) any of your work supported or sponsored by U.S. Government funds? ☐ 1—Yes ☐ 2—No ☐ 3—Don't know

17. If yes, indicate the approximate part of Government support.
☐ 4 1%-25% ☐ 5 26%-50% ☐ 6 51%-75% ☐ 7 76%-100% ☐ 8 Don't know

The following item is to be answered only by *full-time or part-time employed* individuals.

18. Check if you have received notice that your position will terminate prior to (Do not report planned voluntary retirement.) ☐ 1—July 1, 1971, ☐ 2—Jan. 1, 1972, or ☐ 3—July 1, 1972.

NOTE: **Answer items 19-24 in terms of your employment situation as of March 1970,** about fourteen months ago. Information for that period is needed to establish a bench mark for changes that have taken place since then.

19. Check **March 1970** employment status.

EMPLOYED FULL-TIME:
☐ 1—Engineering related
☐ 2—Nonengineering related

EMPLOYED PART-TIME:
☐ 3—Engineering related
☐ 4—Nonengineering related

☐ 5—Unemployed and seeking employment
☐ 6—Not employed and not seeking employment
☐ 7—Retired

If as of March 1970, you were NOT EMPLOYED AND NOT SEEKING EMPLOYMENT or were RETIRED, please mail questionnaire to the Engineers Joint Council and do not proceed further; all others please continue.

20. Check the box of the category which is most appropriate for your **March 1970** principal employer (check only one).
☐ 0—Private Industry or Business
☐ 1—Self-employed
☐ 2—College or University
☐ 3—Junior College or Technical Institute
☐ 4—Secondary, Elementary or other school
☐ 5—Nonprofit Organization, other than a school
☐ 6—Federal Government—Civilian Employee
☐ 7—Military Service, CC of USPHS or NOAA
☐ 8—State Government
☐ 9—Local Government
☐ 10—Other (specify).....

21. Please give location of your **March 1970** employment. ..... (city) (state)

22. Check the field of specialization, product or service area, and job function which best describes your **March 1970** employment *(check only one term from each list).*

FIELD OF SPECIALIZATION
☐ Same as indicated in item 14

☐ 01 Aerospace Engineering
☐ 02 Agricultural Engineering
☐ 03 Automation/ Control
☐ 04 Chemical Engineering
☐ 05 Civil Engineering
☐ 06 Communications
☐ 07 Computer/ Mathematics
☐ 08 Education (general)
☐ 09 Electrical Engineering
☐ 10 Electronics Engineering
☐ 11 Engineering (general)
☐ 12 Engineering Sciences
☐ 13 Environmental/ Sanitary Engineering
☐ 14 Geological Engineering
☐ 15 Industrial Engineering
☐ 16 Management/ Business Administration
☐ 17 Manufacturing Engineering
☐ 18 Mechanical Engineering
☐ 19 Metallurgical Engineering
☐ 20 Mining Engineering
☐ 21 Naval Arch/ Marine Engineering
☐ 22 Nuclear Engineering
☐ 23 Petroleum Engineering
☐ 24 Plant/ Facilities Engineering
☐ 25 Product Engineering
☐ 26 Science (basic)
☐ 27 Systems Engineering
☐ 28 Transportation Engineering
☐ 29 Other Engineering
☐ 30 Other Nonengineering

PRODUCT OR SERVICE AREA
☐ Same as indicated in item 14

☐ 01 Agriculture and Food
☐ 02 Aircraft and Space
☐ 03 Ceramics
☐ 04 Chemicals/Allied Products
☐ 05 Communications Services
☐ 06 Computers
☐ 07 Construction/ Civil Engineering
☐ 08 Education & Information Services
☐ 09 Electrical Equipment
☐ 10 Electronic Equipment
☐ 11 Machinery/ Mechanical Equipment
☐ 12 Marine Transportation
☐ 13 Metals (basic)
☐ 14 Metal Fabricated Products
☐ 15 Mining
☐ 16 Motor Vehicles
☐ 17 Ordnance
☐ 18 Petroleum
☐ 19 Rail Transportation
☐ 20 Utilities
☐ 21 Other

JOB FUNCTION
☐ Same as indicated in item 14

Check your principal job function below. If you were *a manager* of this function, check this box ☐ in addition to the function below.

☐ 01 Administration
☐ 02 Consultation
☐ 03 Construction
☐ 04 Design
☐ 05 Development
☐ 06 Engineering (general)
☐ 07 Planning
☐ 08 Production
☐ 09 Research
☐ 10 Sales and Service
☐ 11 Teaching
☐ 12 Other

23. Which area was a major portion of your work **as of March 1970** related to? *(check only one)* ☐ Same as indicated in item 15.
☐ 1—Health
☐ 2—Public Works
☐ 3—Urban Development
☐ 4—Pollution
☐ 5—Defense
☐ 6—Space
☐ 7—Transportation
☐ 8—Atomic Energy
☐ 9—Industrial Products/ Processes
☐ 10—Education
☐ 11—Consumer Products
☐ 12—Other (specify).....

24. Was any of your work **as of March 1970** supported or sponsored by U.S. Government funds? ☐ 1—Yes ☐ 2—No ☐ 3—Don't know

25. If yes, indicate the approximate part of Government support.
☐ 4 1%-25% ☐ 5 26%-50% ☐ 6 51%-75% ☐ 7 76%-100% ☐ 8 Don't know

Thank you for your cooperation. Return questionnaire to Engineers Joint Council in the postpaid envelope provided.

ENGINEERS JOINT COUNCIL

MEMBER SOCIETIES

American Society of Civil Engineers
American Institute of Mining, Metallurgical and Petroleum Engineers
American Society of Mechanical Engineers
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Instrument Society of America
American Society for Quality Control
American Institute of Industrial Engineers
Society of Fire Protection Engineers
American Institute of Plant Engineers
American Association of Cost Engineers
Society of American Military Engineers

ASSOCIATE SOCIETIES

Air Pollution Control Association
National Institute of Ceramic Engineers
American Society for Nondestructive Testing
Society of Packaging and Handling Engineers
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