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# OCCUPATIONAL & MANPOWER INFORMATION

developed by the  
IOWA EMPLOYMENT SECURITY COMMISSION

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### Introduction

National legislation (the Vocational Education Act of 1963 and its 1968 Amendments) established a mandate requiring the Employment Service to furnish occupational information to Vocational Education for use in career guidance and in course planning and curriculum development.

Unfortunately, no funds were allocated to carry out this assigned responsibility. As a result, efforts were made to provide as much varied information as possible with existing resources. Descriptions of the widely diversified materials which have been developed or are in process are contained in the enclosed bibliography.

These materials lacked one component that Vocational Education officials deemed essential for planning--an indication of the volume of job opportunities in the various demand occupations. Some of our publications provided indications of such volume, but did not contain specific long-range occupational projections.

Traditionally, the device used most frequently to obtain data for occupational projections was the Area Skill Survey. Usually, these were restricted to a single metropolitan area and were based upon information received from employers. These surveys provided valuable information, but were extremely time consuming and expensive to complete. However, the greatest limitation of such surveys was related to the employers' inability or unwillingness to accurately predict future manpower needs. Obviously, such inaccuracy would materially affect the reliability of a survey. To cite one example, in one of the area skill surveys conducted in Iowa in 1958-1960, one of the largest employers in the area deliberately misquoted his future needs for skilled and semiskilled workers, to disguise his plans for rather drastic mechanization. Accordingly, the survey results in these occupational areas were significantly in error.

### Weber Report

In the fall of 1967, an advisory committee on Employment Service Research was established to aid the United States Employment Service in making a comprehensive review and evaluation of its job market information program. This committee was headed by Professor Arnold Weber of the University of Chicago (now Assistant Secretary of Labor for Manpower) and was composed of 20 people representing government, industry, the academic world, labor, and minority groups. Attached to this committee were 6 field consultants from the academic world who visited State and local ES offices and outside users of job market information developed by the ES--including vocational educators and other school officials, community planners, research organizations, local employers, and other groups.

NOTE: If any vocational education facility or other user of manpower information has not received copies of those materials listed in the bibliography which have previously been distributed; copies may be requested from the nearest ES local office.

In the past, materials furnished to schools were often addressed to the counselors. Thus, vocational education planners may not have been aware that such materials were available.

Materials furnished to State Vocational Education officials were distributed by the Iowa Employment Security Commission at 1000 East Grand, Des Moines; therefore, requests for materials should be directed to that office.

One prime requisite of an effective manpower information system is feedback from the users of such data. Any suggestions, comments or criticisms of our existing or planned job market information program will be greatly appreciated. Combined interagency efforts will result in a much stronger, more efficient information system.

BIBLIOGRAPHY OF OCCUPATIONAL INFORMATION MATERIALS AVAILABLE TO VOCATIONAL EDUCATION

Examples of Materials which Have Been Distributed or are available upon request

Title of Publication

Brief Description

"OCCUPATIONAL INFORMATION  
DES MOINES AREA" (area 11 only)

Published quarterly by Des Moines Local ES office. Based on study of hard-to-fill jobs, i.e., job orders unfilled for 30 days or more. Compares current hard-to-fill jobs with prior quarter. Indicates trends in shortage occupations by listing hard-to fill openings occurring in each of last 4 quarters. Identifies occupations which are consistently hard to fill and which indicate significant training needs.

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JOB GUIDE SERIES

Five different career-area booklets. Each includes an area-of-work narrative which discusses trends outlook, the effects of technological change, and the comparative advantages and disadvantages of the occupational area. In addition several representative job descriptions are included, with the front page containing statewide job information, while the reverse side contain variables (wages, outlook, etc.) for Iowa's 6 largest cities. Area schools and high schools were provided copies of the booklet, for counseling purposes and a supply of individual Job Guide leaflets for handing out to counselees or other interested students.

"CAREERS IN FOOD SERVICE"--1966

Individual Job Descriptions:

BAKER	KITCHEN HELPER
BUSBOY	KITCHEN SUPERVISOR
COOK	MANAGER, RESTAURANT OR
COUNTERMAN	COFFEE SHOP
HOSTESS	PANTRYMAN, SALAD GIRL,
	WAITRESS

Title of Publication

Brief Description

OTHER OCCUPATIONAL-RELATED MATERIALS

"GUIDE FOR SERVICE OCCUPATIONS IN IOWA"--1966

Contains narrative section which explores the burgeoning service industry, plus 96 individual job descriptions which outline where such jobs are found, provide wage ranges, and spell out general worker requirements.

Field of Work Areas Covered:

BUILDING & RELATED	LAUNDRY & RELATED
CASHIERING	MECHANICS & REPAIRMEN
CLERICAL	PERSONAL SERVICE
DOMESTIC SERVICE	PROTECTIVE SERVICE
DRIVING	SELLING
FOOD SERVICE	SUPERVISION
HEALTH RELATED	MISC. SERVICE JOBS

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"LICENSED OCCUPATIONS IN IOWA"--1967

Covers all occupations licensed by the State of Iowa. Identifies the licensing board and outlines major licensing requirements.

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"JOB MARKET SUMMARY STATEMENT--DEMAND OCCUPATIONS IN IOWA SUITABLE FOR VOCATIONAL TRAINING"--1968

Identifies jobs which are consistently in demand and indicates wage ranges. Arranged by merged-vocational school areas.

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"City Information Cards"--1966

Packet contains one 5" x 8" card for each of the 34 Iowa cities where Employment Service offices are located. Contains such information as population, workforce, major industries, and representative occupations.

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"JOBS IN IOWA TODAY"--1968

One page leaflet designed for use as a handout, explaining Iowa's major industries and briefly discussing job opportunities and wage levels.

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Title of Publication

Brief Description

APPRENTICESHIP OPPORTUNITIES

A guide which gives practical information on apprenticeable occupations in the Des Moines area for persons engaged in the employment and guidance of young people making a vocational choice.

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APPRENTICESHIP IN THE BUILDING TRADES  
AND SUGGESTED HIGH SCHOOL COURSES

AID--for guidance counselors on trades and suggested courses which prepare young people for apprenticeship.

This material and a newsletter are available upon request from Apprenticeship Information Center, 150 Des Moines Street, Des Moines, Iowa 50316

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MANPOWER REPORTS--Selected Counties

Booklet which reports results of manpower study designed to provide economic development assistance to rural areas. Contains commuting information, age, education, social and economic characteristics for county.

Completed: Lyon, Osceola, Dickinson,  
Sioux, O'Brien, Mitchell, Howard,  
Winneshiek, Allamakee, Floyd,  
Chickasaw, Fayette, Deleware,  
Jones, Washington, Henry Van Buren,  
Davis, Mills, Montgomery, Adams,  
Fremont, Page, Taylor, Ringgold,  
Ida, Monona, Crawford, and Harrison  
Counties

Preliminary Report: Plymouth, Cherokee, Sac, Clarke and Decatur Counties.

Reports available upon request from Community Development Section, Iowa Employment Security Commission, 1000 East Grand Avenue, Des Moines, Iowa 50319

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Statewide Survey of wage levels for  
9 low-paying occupations

Survey conducted through all 34 local ES offices, as requested by the Department of Housing and Urban Development.

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BIBLIOGRAPHY OF OCCUPATIONAL INFORMATION MATERIALS AVAILABLE TO VOCATIONAL EDUCATION

Preview of Occupational Information Materials Planned or in Progress

Title of Publication

Brief Description

STATEWIDE WAGE INFORMATION

Each local ES office will be requested to develop area wage information for a rather extensive cross-section of local jobs. Such information will be based primarily on surveys of closed employer orders in the ES offices, plus any specific surveys which may be available. Both composite and individual area wage data will be included in the resulting publication.

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"PROFILE OF A CITY"

Single sheet leaflet for cities in Iowa--containing current information on population, industries, representative jobs, housing, educational facilities, etc., useful to job applicant or other individuals seeking such information for specific areas. These profiles will be developed initially for those cities having Employment Service local offices but could be expanded to include any city with significant industry and job opportunities. This publication will replace the "City Information Cards" which were designed primarily for Employment Service use only. These profiles would be distributed to all manpower oriented agencies and educational institutions.

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TENTATIVE OCCUPATIONAL PROJECTIONS 1970 and 1975

Will show expansion needs by CAMPS and Vocational Education areas. Statewide expansion needs by detailed occupations based on U.S. Census--1960. Male and female employment for 1960 and projected to 1975 (statewide) Replacement Needs (statewide) (death & retirement) 1970-75. Area needs by occupational groups. Also narrative discussing trends and methodology.

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JUL 7 1969  
*Boyd*

## ANALYSIS OF MANPOWER NEEDS AND JOB OPPORTUNITIES IN THE STATE

1.1 Table 1 summarizes the State's projected labor demand and supply for fiscal years 1970 and 1974.

The material prepared for Table 1 was derived from many sources, see 1.2, and appears to be conservative in estimated manpower needs over the next five years.

An analysis of the table will indicate obvious discrepancies in coverage in the areas of projected needs in agriculture and home economics.

Projected labor supply for the vocational education sector has been provided by estimated of graduates of programs planned for Fiscal Year 1970.

While the basic data for the information in Table 1 was developed from Skill Surveys conducted by the Area Vocational Schools; local Employment Service offices were closely involved in almost every step of the development of the survey, analysis of response, and the final interpretation of the results.

In addition, Employment Service representatives at the State level worked very closely with Vocational Education personnel in developing the statewide composite list, and in applying appropriate Dictionary of Occupational Titles (DOT) classification titles and codes.



1.2 Indicate the sources and recency of data:

Data in Table 1 were derived from various statewide manpower need surveys and surveys in geographic areas of Iowa. The manpower need surveys were conducted not only by area schools personnel but also by the State University graduate students as well as Vocational Education Branch personnel. For the most part, these surveys were partially funded with ancillary service monies through the Iowa Research Coordinating Unit which is a section of the Vocational Education Branch, Department of Public Instruction.

The preparation of Table 1 is the result of cooperative efforts of the Vocational Education Branch and the Iowa Employment Security Commission personnel.

The major portion of information in Table 1 was obtained from the surveys conducted by twelve of the fifteen area schools operating in the state. Each area school conducted its survey independently of the others. However, each used a list of area employers who employed four or more employees. These lists were obtained through the Iowa Employment Security Commission. Each area school then prepared its own list of the occupations to be surveyed. Survey returns ranged from approximately 25 to 51 per cent. Projections of manpower needs were made by the employers.

In the supplement to Table 1, information regarding manpower needs is projected from 1960 through 1974. The source of this material is a study by Palomba (1) which was completed in 1968. The Iowa model used for the projections was taken from a national projection in a publication, Tomorrow's Manpower Needs prepared by the Bureau of Labor Statistics of the U.S. Department of Labor, 1968.

In lieu of an over-all State manpower needs survey, between 1967 and 1969, the area schools carried out individual area manpower needs and training needs surveys. Those reported include:

Area I, Calmar	Area X, Cedar Rapids
II, Mason City	XI, Des Moines
III, Estherville	XII, Sioux City
V, Fort Dodge	XIII, Council Bluffs
VI, Marshalltown	XV, Ottumwa
IX, Davenport	XVI, Burlington

Several area schools carried out student interest surveys to assist in curriculum planning.

Other manpower surveys, some involved cooperation with State and National trade association, included the following:  
"Boat and Motor Repair Personnel, 1967" Survey by T&I Education Section, Vocational Education Branch, Department of Public Instruction, Des Moines, Iowa, 1967.  
Giесе, Harlan, "Iowa Training Needs for Metal Tradesmen."  
M.A. Cedar Falls, Iowa: University of Northern Iowa.  
November, 1967.

"Musical Instrument Repairmen, Manpower and Training Needs, 1968." Regional survey by T&I Education Section, Vocational Education Branch, Department of Public Instruction, Des Moines, Iowa, 1968.

- Pickles, LeRoy J. "Personnel and Training Needs of Iowa's Printing Industry." M.S. Ames, Iowa: Iowa State University, 1967.
- Stephens, Robert L. "Major Appliance Repair Specialist Needs of Iowa." M.S. Ames, Iowa: Iowa State University, 1968.
- Sumter, Paul E. "Mechanical-Technician Job Survey and Training Needs in the Iowa Aviation Industry." M.S. Ames, Iowa: Iowa State University, 1967.
- "Survey of Manpower and Training Needs for Shoe Service Repairmen." November, 1968.
- Weede, Gary Dean, "Electronic Technician Personnel and Training Needs of Iowa Industries." Ph.D. Ames, Iowa: Iowa State University, 1967.
- Wilson, Richard A., "Architectural Drafting Needs as Indicated by Selected Iowa Industries and Engineering Firms." M.S. Ames, Iowa: Iowa State University, 1968.
- Zook, Wayne H., "Personnel and Training Needs for Skilled and Technical Workers in Iowa Industries Manufacturing and Fabricating Plastics." Ph.D. Ames, Iowa: Iowa State University, 1968.
- Trade and Industry Section, Vocational Education Branch,  
Department of Public Instruction, Des Moines, Iowa.

Table 1

## EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS

## LABOR DEMAND AND SUPPLY SUMMARY

State IOWA

Fiscal Year Ending June 30, 1970

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand <sup>a</sup>		Projected Labor Supply (output) <sup>a</sup>	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1970	Other <sup>b</sup> 1970
01.01	421.181	Farmer	40	17		501	
01.01	096.128	Feed & farm management advisor	15	12	2	42	
01.01	409.168	Farm management	16	8		5	
01.01	421.883	Farm hand - general & grain	146	8	4	25	
01.01	413.887	Livestock yardman	2	3		9	
01.02	168.287	Inspector-grader grain-mill prdt	50	15	7	2	
01.02		Serviceman fertilizer	7	1		65	
01.02	162.168	Manager - grain elevator	36	2	4		
01.02	529.132	Feed mill operator-manager	50	8	8	3	
01.02	520.885	Feed and mill workers	40	11	5	5	
01.02	013.181	Agricultural technician	23	2		3	
01.03	624.281	Mechanic-farm equipment	315	54	25	77	
01.03	624.381	Farm equip. mechanics helper	21	3	4	9	
01.03	624.381	Farm equipment set up man	58	11	13	10	
01.03	223.387	Agriculture machinery parts man	22	2	2	1	
01.03	638.281	Mechanic-maintenance	13	2		7	
01.03	409.883	Agriculture equipment operator	113	30	25	92	
01.0301	409.883	Farm equipment operator	4	4	3	8	
01.0301	620.281	Tractor mechanic	129	31	21		
01.04	521.887	Egg & poultry processing	81	4	2	1	

<sup>a</sup>Not available for 1974<sup>b</sup>Not available

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless other- wise noted	1971 unless other- wise noted	Voc. Ed. 1970	Other 1970
01.04	183.118	Supervisor-supt. dairy plant	10	2		8	
01.04	180.118	Field man - seed corn	17	2		12	
01.04	529.782	Dairy processing & equip. opers	40	4	7	8	
01.04	525.	Meat processing	138	10	13	15	
01.04	040.381	Seed processing specialist	21			2	
01.05	406.887	Nursery worker	158	22	12	12	
01.05	142.081	Floral designer	8	1	1	20	
01.05	407.181	Landscaper	13	2		1	
04.0101	258.358	Salesman, advertising	30	2	1	15	
04.0102	263.358	Salesman, men & boys clothing	122	12	9	75	
04.0102	263.458	Salesperson, men's & boy's clothing	107	18	10	51	
04.0102	263.358	Salesman, footwear	142	24	13	43	
04.0102	263.358	Salesman, shoe	33	3	2	61	
04.0102	263.358	Salesman, women & girls clothing	77	8	4	22	
04.0102	263.458	Salesperson, women & girls clothing	258	19	7	72	
04.0103	250.358	Salesman, automobile	230	45	6	6	
04.0103	267.358	Salesman, liquid propane	16			6	
04.0103	267.358	Salesman, petroleum products	2			75	
04.0103	915.867	Service station attendant	1			32	
04.0103	223.387	Auto partsman	260	44	26	15	
04.0104	252.258	Salesman, financial	1			5	
04.0104	186.288	Agricultural credit loans	1			18	
04.0105	262.358	Salesman, food products	95	9	11	84	

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1970	1970
04.0108	289.458	Salesperson, general	897	59	91	354	
04.0108	290.478	Sales clerk	1,030	98	83	48	
04.0109	276.358	Salesman, bldg. & construction equipment & supplies	39	2	4	35	
04.0109	277.358	Salesman, farm & garden equip. & supplies & livestock	105	16	26	40	
04.0109	277.358	Salesman, farm implements	167	15	14	6	
04.0109	262.358	Salesman, grain & feed products	41	2	7	30	
04.0109	276.358	Salesperson, hardware	112	10	5	10	
04.0109	276.358	Salesman, hardware	102	5	5	25	
04.0109	003.151	Salesman, industrial	307 <sup>c</sup>	129 <sup>d</sup>	127 <sup>e</sup>	25	
04.0109	289.358	Salesperson, parts	145	10	11	22	
04.0109	289.358	Partsman, farm equipment	2		1	10	
04.0109	277.	Farm supply sales & service	231	251	34	20	
04.0109	277.358	Farm equip. sales & parts	10			10	
04.0109	277.	Farm equip. sales & service	50	7	4	20	
04.0109	185.168	Manager, retail feed store	29	1	1	10	
04.0112	250.258	Salesman, insurance	64	17	16	3	
04.0112	241.168	Agr. insurance claims adjusting	3			1	
04.0113	163.118	Sales manager	38	11	8	5	
04.0114	289.358	Salesman, general	1,297	115	165	30	
04.0114	254.258	Sales representative	1,225	219	141	30	
04.0114	278.358	Salesman, appliance	186	23	12	8	
04.0114	263.458	Salesperson, drygoods	156	13	14	5	
04.0114	274.358	Salesman, floor covering	7	3	4	2	
04.0114	260.458	Salesperson, flowers	17			20	

<sup>c</sup>1967  
<sup>d</sup>1968  
<sup>e</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1970	Other 1970
04.0114	274.358	Salesperson, furniture	107	14	9	8	
04.0114	282.258	Salesman, medical equipment and supplies	7			2	
04.0114	281.358	Salesman, office supplies and machines	28	3	2	4	
04.0114	278.358	Salesman, radio & TV parts	22	8	3	5	
04.0114	211.468	Cashier-wrapper	116	2	2	3	
04.0114	298.081	Display man	2	1		12	
04.0114	310.868	Hostess & or waitress	305	14	29	30	
04.0114	209.588	Marker	7			2	
04.0114	922.887	Warehouseman	21			3	
04.0114	262.358	Salesman, grain & feed	200	39	38	3	
04.0115	299.138	Manager, retail department	18			31	
04.0116	250.358	Salesman, real estate	46	9	9	2	
04.0117	292.358	Salesman, route	287	20	20	10	
04.0117	259.358	Salesman, softwater service	3	4		5	
04.0118	255.258	Traffic agent	2			40	
07.0101	079.378	Dental Assistant	225	57	39	123	
07.0103	712.381	Dental laboratory technician	88	16	12	9	
07.0203	078.381	Medical laboratory assistant	169	29	26	63	
07.0204	075.378	Associate degree in nursing	1,383	230	264	160	
07.0205	079.378	Licensed practical nurse	812	210	118	643	
07.0206	355.878	Nurse aide - orderly	4,043	1,217	1,033	416	
07.0209	079.368	Inhalation therapist	24	8	11		
07.0211	078.368	X-ray technician	93	15	10		

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless other- wise noted	1971 unless other- wise noted	Voc. Ed. 1970	Other 1970
07.0212	007.081	Optical technician	17	2	3		
07.0213	079.378	Surgical technician	77	35	29	43	
07.0214	079.368	Occupational therapy aid	34	15	6	11	
07.0215	079.378	Physical therapist	5				
07.0299	079.368	Medical assistants	203	51	27	I 108	
07.0299	219.388	Ward clerk	40	1			
07.0304	913.883	Ambulance driver	1				
09.0202	787.782	Sewing machine operator	733	176	186	10	
09.0202	785.281	Tailor (alteration)	72	22	11	10	
09.0202	363.782	Steam press operator	116	15	19		
09.0202	362.782	Dry cleaning machine operator	28	3	1		
09.0202	729.381	Cutter fabric & leather	41	12	11		
09.0203	315.381	Cook	874	134	79	500	
09.0203	311.878	Car hop	35	17	6		
09.0203	311.878	Floor girl, cafeteria	80	15	7		
09.0203	311.878	Counterman	63	2			
09.0203	312.878	Bartender	108	8	3		
09.0203	311.878	Bus boy	269	31	27		
09.0203	311.878	Waiter & waitress	2,498	265	287	30	
09.0203	310.868	Hostess & host	147	35	21		
09.0203	316.884	Meat cutter (butcher)	1,372	115	81		
09.0203	318.887	Kitchen helper	790	68	39		
09.0203	526.886	Baker's helper	28	6		5	
09.0203	187.168	Manager, food establishment	76	9	8		
09.0203	317.887	Cook's helper	489	55	29	500	
09.0203	526.781	Baker	251	40	63	10	

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless other- wise noted	1971 unless other- wise noted	Voc. Ed. 1970	Other 1970
09.0203	313.131	Chef	106	49	39		
09.0204	780.884	Upholsterer	33	3	5	3	
14.0101	160.188	Accounting, farm records, farm tax, ag. econ.	19	2		23	
14.0102	210.388	Bookkeeper	3,161	281	218	42	
14.0199	219.488	Accounting clerk	1,541	170	134	133	
14.0200	020.188	Programmer	5	2	2	400	
14.0201	213.382	Computer operator	253	37	40		
14.0202	213.782	Tabulating machine operator	44	2			
14.0204	012.168	Systems analyst	78	22	19	50	
14.0300	208.588	Transcribing machine operator	306	76	68	170	
14.0300	207.884	Duplicating machine operator	225	16	12	30	
14.0300		Office machine operator	1,240	126	172	40	
14.0302	206.388	File clerk	158	21	14	5	
14.0303	209.388	Clerk, general	5,290	408	518	74	
14.0401	235.862	Telephone operator (PBX)	438	32	22	24	
14.0406	237.368	Receptionist	646	61	86	47	
14.0700	169.268	Educational secretary	15	9		63	
14.0702	202.388	Secretary - stenographer	5,134	598	480	479	
14.0704	201.368	Medical secretary	20	8		29	
14.0706	201.368	Legal secretary	70	26	10	32	
14.0805	169.168	Office manager-agricultural agy	1			1	
14.0901	209.388	Clerk typist	2,596	323	218	304	
14.0902	213.582	Keypunch operator	830	112	77	94	
16.0105	022.281	Chemical technician	141	9	57		
16.0105	559.782	Chemical operator	66	5	5	1	



Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1970	Other 1970
16.0106	182.168	Civil technician	418	2		20	
16.0106	182.168	Construction superintendent	13	5			
16.0107	003.181	Electrical technician	135	27	20	15	
16.0108	003.181	Electronic technician	570	47	31	285	
16.0109	710.281	Electro-mechanical technician	12	4			
16.0112	003.281	Instrumentation technician	75	13	8		
16.0113.02	007.181	Mechanical technician	980	56	38	178	
16.0113.03	012.288	Industrial Engineering technician	74	2	1	15	
16.0114	011.281	Metallurgy technician	26	5			
17.0200	827.281	Household appliance repairman	719	195	180		
17.0200	639.381	Vending machine repairman	14	2		8	
17.0200	723.884	Appliance service	89	14	10		
17.0300	620.281	Front end alignment man	113	35	14		
17.0300	620.281	Brakeman, automobile	113	21	13		
17.0301	845.781	Auto spray painter	91	30	15		
17.0301	807.381	Auto body repairman	350	93	54	226	
17.0302	620.381	Auto tuneup	265	66	70		
17.0302	620.281	Auto equip. maintenance service	7				
17.0302	915.867	Auto service station attendant	646	55	53	779	
17.0302	620.281	Auto air conditioning mechanic	53	21	28		
17.0302	220.281	Auto maintenance mechanic	329	24	19		
17.0302	620.281	Auto mechanic	1,693	359	164		
17.0303	620.281	Transmission mechanic	74	13	7	2	
17.0399	919.883	Tow truck operator	5				
17.0399	915.884	Tire repairman	107	14	14		
17.0399	915.887	Lubricator	8				

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1970	1970
17.0399	620.884	Used car appearance reconditioner	56	1			
17.0399	913.463	Taxi driver & bus driver	115	10	3	20	
17.0399	904.883	Tractor trailer truck driver	1,964	300	203		
17.0399.02		Service station mechanic				122	
17.0401		Airframe (certificated)	35 <sup>c</sup>		38 <sup>e</sup>		
17.0401		Airframe (noncertificated)	32 <sup>c</sup>		34 <sup>e</sup>		
17.0401		Powerplant (certificated)	29 <sup>c</sup>		35 <sup>e</sup>		
17.0401		Powerplant (noncertificated)	27 <sup>c</sup>		21 <sup>e</sup>		
17.0401		A & P certificate	135 <sup>c</sup>		186 <sup>e</sup>		
17.0401	825.381	Aircraft radio mechanic	4	1	2	69	
17.0401	912.887	Aircraft refueler & service	32	6	4		
17.0401	710.281	Aircraft instrument repairman	17	2	2		
17.0401	621.381	Flight test shop mechanic	3	3	2		
17.0401	621.281	Aircraft engine tester	6	3	2		
17.0401	621.281	Airplane inspector	25 <sup>c</sup>		35 <sup>e</sup>		
17.0402		Pilot	194 <sup>c</sup>		250 <sup>e</sup>		
17.0403.02		Service (certificated)	77 <sup>c</sup>		109 <sup>e</sup>		
17.0600	633.281	Office machine repairman	42	22	9	10	
17.0700	142.081	Commercial artist	58	6	7	55	
17.0900	700.281	Jeweler	7	2			
17.0900	143.062	Photographer	126	10	9	23	
17.1001	860.381	Carpenter	1,980	570	351		
17.1001	869.381	House repairman	83	9	2	198	
17.1001.02	864.781	Floor layer	153	26	13		
17.1001.02	866.381	Roofer	204	92	49		
17.1002	824.281	Electrician	971	152	75	40	

<sup>c</sup>1967  
<sup>e</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1970	1970
17.1003	922.883	Industrial truck operator	182	1	2	6	
17.1003.02	859.883	Operating engineer	1,650	293	133		
17.1005	741.884	Painter	475	81	81	13	
17.1006	842.781	Plasterer	103	59	19	1	
17.1007	637.281	Gas serviceman	17	3	1		
17.1007	862.381	Plumber & pipefitter	891	271	116	8	
17.1004	861.381	Bricklayer	421	187	84	48	
17.1099	844.884	Cement Mason	243	63	37		
17.1099	570.132	Batch & mix plant foreman	80	17	6		
17.1099	801.781	Iron worker	128	38	15		
17.1099	862.884	Laborer - construction	7,815	581	398	65	
17.1099	922.887	Building materials specialist	13				
17.1099	929.137	Yardman, building materials	17	2	2		
17.1099	160.288	Estimator	137	19	15		
17.1100	382.884	Custodian	1,035	63	43	12	
17.1200	620.281	Heavy equipment mechanic	133	18	13	48	
17.1200	620.281	Construction equipment mechanic	28	6	1		
17.1202	625.281	Diesel mechanic	229	72	28		
17.1300	007.281	Mechanical draftsman	469	65	86	285	
17.1300	005.281	Structural detailing draftsman	14	1	9	21	
17.1300	017.281	Map draftsman	51	12	6		
17.1300	001.281	Architectural draftsman	533	177	203	94	
17.1300	005.281	Civil draftsman	30	2		15	
17.1300	003.281	Electrical draftsman	46	16	10		
17.1401	824.281	Electrician	939 <sup>c</sup>	161 <sup>d</sup>			
17.1402	821.381	Lineman	826	151	99	20	

<sup>c</sup>1967  
<sup>d</sup>1968

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless otherwise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1970	1970
17.1503	720.281	Television serviceman	122	19	20	74	
17.1602	369.884	Laundry operator	239	4	12	2	
17.1900	649.782	Papercutter	8				
17.1900	659.130	Foreman, print shop	130	11	7		
17.1900	627.28	Linotype machinist	29	2			
17.1900	973.381	General printer	23	1	3		
17.1900	651.782	Letter press printer	9	4	1		
17.1900	972.781	Platemaker offset	15				
17.1900	972.381	Platemaker (lithographer)	8	2	1		
17.1900	207.788	Printer, letterpress, offset, linotype	54	20	8		
17.1900	979.884	Silk screen printer	30	3	7		
17.1900	653.782	Folding machine operator	77	8	4		
17.1900	977.884	Bookbinder	305	24	18		
17.1900	973.381	Job printer	123	13	12		
17.1900	971.381	Photoengraver	74	7	6		
17.1900	651.782	Combination man in offset area	108 <sup>c</sup>	40 <sup>d</sup>	29 <sup>e</sup>	196	
17.1900	972.382	Photolithography	117 <sup>c</sup>	26 <sup>d</sup>	27 <sup>e</sup>		
17.1900	651.886	Lithography pressman	286 <sup>c</sup>	52 <sup>d</sup>	49 <sup>e</sup>		
17.1900	971.281	Lithography composition	56 <sup>c</sup>	8 <sup>d</sup>	9 <sup>e</sup>		
17.1900	643.885	Bindery worker	519 <sup>c</sup>	51 <sup>d</sup>	28 <sup>e</sup>		
17.1900	751.782	Comb. man in letterpress area	330 <sup>c</sup>	98 <sup>d</sup>	19 <sup>e</sup>		
17.1900	973.381	Letterpress composition	207 <sup>c</sup>	24 <sup>d</sup>	18 <sup>e</sup>		
17.1900	651.782	Letter pressman	474 <sup>c</sup>	40 <sup>d</sup>	27 <sup>e</sup>		
17.1900	650.582	Machine composition (hot type)	301 <sup>c</sup>	56 <sup>d</sup>	58 <sup>e</sup>		
17.1900	975.782	Stereotyping	117 <sup>c</sup>	4 <sup>d</sup>	5 <sup>e</sup>		
17.1900		Lithography	100 <sup>c</sup>	17 <sup>d</sup>	14 <sup>e</sup>		

c<sup>1967</sup>  
d<sup>1968</sup>  
e<sup>1970</sup>

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless other- wise noted	1971 unless other- wise noted	Voc. Ed. 1970	Other 1970
17.2100	710.281	Aircraft instrument repair	14 <sup>c</sup>		32 <sup>e</sup>		
17.2100	710.281	Electric meter repairman	14	6			
17.2100	715.281	Watch repairman	15			2	
17.2301	518.782	Molder	229	37	60	I	3
17.2301	518.381	Coremaker	70	11	9		
17.2302	600.280	Machinist (job shop)	1,186 <sup>c</sup>	364 <sup>d</sup>	307 <sup>e</sup>		
17.2302.02	619.885	Machine operator	186	36	10	I	
17.2302.02	616.380	Set-up man	376	55	53		66
17.2302.02	616.380	Die setter	87	21	12	I	
17.2302.03	626.281	Machinery repairman	9				40
17.2302.04	601.280	Tool & die maker	1,050 <sup>c</sup>	395 <sup>d</sup>	371 <sup>e</sup>		
17.2303	600.380	Machine set-up operator	8,947 <sup>c</sup>	2,327 <sup>d</sup>	2,140 <sup>e</sup>		
17.2305	304.281	Sheetmetal worker	1,201	159	264		10
17.2305	804.281	Sheetmetal worker, refrig., heating & air conditioning	259	61	41		
17.2306	812.884	Welder	2,184	346	271	I	304
17.2306	600.381	Lay-out man	181	57	55		
17.2306	812.887	Welder-combination	2,900 <sup>c</sup>	758 <sup>d</sup>	764 <sup>e</sup>		
17.2399	809.381	Fabricator, metal	28	3	6		
17.2399	609.381	Floor inspector	1,390	90	104		
17.2399	601.281	Gage inspector	40	7	6		
17.2399	609.684	General inspector	402	35	38		
17.2399	507.782	Heat treater	73	16	17		
17.2399		General purpose mechanic	21	2	2		
17.2399	827.884	Assemblers	3,344 <sup>c</sup>	913 <sup>d</sup>	922 <sup>e</sup>		
17.2399	611.782	Forgepress operators	144 <sup>c</sup>	39 <sup>d</sup>	41 <sup>e</sup>		

<sup>c</sup>1967<sup>d</sup>1968<sup>e</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1970	Other 1970
17.2399	621.281	Hydraulic mechanic	234 <sup>c</sup>	81 <sup>d</sup>	94 <sup>e</sup>		
17.2399	638.281	Machine repairman	2,587 <sup>c</sup>	445 <sup>d</sup>	488 <sup>e</sup>		
17.2399	519.887	Moulder-foundry worker	2,879 <sup>c</sup>	1,625 <sup>d</sup>	1,479 <sup>e</sup>		
17.2399	600.280	Patternmaker	185 <sup>c</sup>	45 <sup>d</sup>	23 <sup>e</sup>		
17.2602	332.271	Cosmetology	96			28	
17.2700	779.884	Plastics - molding	1,655	1,940	1,404 <sup>f</sup>		
17.2700	752.884	Plastics - thermoforming	180	267	206 <sup>f</sup>		
17.2700	754.884	Plastics - casting	205	210	67 <sup>f</sup>		
17.2700	754.884	Plastics - reinforcing	55	78	181 <sup>f</sup>		
17.2700	754.884	Plastics - foaming	18	22	23 <sup>f</sup>		
17.2700	754.884	Plastics - coating	9	10	3 <sup>f</sup>		
17.2801	373.884	Fireman	112	4	5		
17.2802	375.268	Patrolman	26			I	30
17.2802	375.268	Policeman	132	16	20		
17.2899	188.188	Assessor	34	3	2		
17.2899	233.388	Mail carrier	121	5	7		
17.2899	232.368	Post office clerk	140	7	7		
17.3100	620.281	Motorcycle repairman	4			I	3
17.3100	625.281	Small engine repair	7	2			
17.3100	623.281	Boat and motor repair	89 <sup>c</sup>	81 <sup>d</sup>	52 <sup>e</sup>		
17.3202	954.368	Water pollution control	29	2			
17.3400	365.381	Shoe service repair man	330	29	78		
17.3601	669.782	Wood worker	86	8		I	130
17.3601	660.280	Cabinetmaker	36	9	8		
17.9900	040.081	Floriculture	28				25
17.9900.01	730.281	Piano technician	32	39	40		2
17.9900.02	828.281	Electric organ technician	28	26	32		
17.9900.03	730.281	Band & orchestra instrument repairman	53	42	39		7

c1967  
d1968  
e1970  
f1973

Employment Opportunities Related  
to Vocational Education Programs

Projected Labor Demands\* 1960-1974

	<u>1960</u>	<u>1974</u>
TECHNICAL & KINDRED	7,920	+7,777
<u>Technicians, Except Medical &amp; Dental</u>	6,127	+5,099
Draftsmen	1,870	+1,065
Surveyors	754	+ 493
Radio Operators	248	+ 139
Technicians, Other	3,255	+3,402
<u>Medical &amp; other Health Workers</u>	1,793	+2,678
Technicians, Medical & Dental	1,793	+2,678
CLERICAL & KINDRED	113,738	+39,504
<u>Stenos, Typists, Secretaries</u>	27,086	+11,121
<u>Office Machine Operators</u>	3,330	+3,916
<u>Other Clerical &amp; Kindred Workers</u>	83,322	+24,467
Accounting Clerks	5,875	+1,206
Bookkeepers, Hand	11,750	+1,864
Bank Tellers	1,733	+1,310
Cashiers	7,311	+5,595
Mail Carriers	3,288	+ 798
Postal Clerks	3,298	- 246
Shipping & Receiving Clerks	2,648	+ 49
Telephone Operators	5,758	- 107
Clerical & kindred, NEC	41,661	+13,998
SALES WORKERS	73,742	+15,072
<u>Insurance Agents &amp; Brokers</u>	5,862	+ 930
<u>Real Estate Agents &amp; Brokers</u>	2,418	+ 700
<u>Other Sales Workers, NEC</u>	65,462	+13,442

\*Catherine A. Palomba, Occupational Projections for Iowa, 1975, Table 3.  
Publication of Industrial Relations Center, Iowa State University, Ames,  
Iowa. 1968. p. 11.

	<u>1960</u>	<u>1974</u>
CRAFTSMEN, FOREMEN & KINDRED WORKERS	114,042	+33,456
<u>Construction Craftsmen</u>	33,884	+ 3,365
Carpenters	12,937	- 242
Brickmasons, Stone Tile Setters	2,039	+ 56
Cement & Concrete Finishers	308	+ 118
Electricians	3,770	+ 704
Excavating, Grading Machine Operators	3,981	+ 1,635
Painters & Paper Hangers	5,024	- 94
Plasterers	515	+ 29
Plumbers & Pipefitters	4,146	+ 774
Roofers & Slaters	555	+ 124
Structural Metalworkers	609	+ 261
<u>Foremen NEC</u>	13,976	+ 5,609
<u>Metalworking Craftsmen except Machines</u>	11,682	+ 1,071
Skilled Machine Workers	5,382	+ 603
Blacksmiths, Forgemen, Hammermen	1,756	- 459
Boilermakers	136	+ 21
Heat Treaters, Annealers, Tempers	213	+ 32
Millwrights	499	+ 149
Molders, Metal (except Coremakers)	681	+ 89
Patternmakers, Metal & Wood	317	+ 116
Rollers & Roll Hands	25	+ 5
Sheet Metal Workers	1,232	+ 299
Toolmakers, Diemakers, Setters	1,441	+ 216
<u>Mechanics &amp; Repairmen</u>	32,127	+19,179
Airplane Mechanics & Repairmen	192	+ 2,150
Motor Vehicle Mechanics	12,302	+ 3,675
Office Machine Mechanics	355	+ 291
Radio & T.V. Mechanics	1,622	+ 348
Railroad & Car Shop Mechanics	500	+ 65
Other Mechanics & Repairmen	17,156	+12,650
<u>Printing Trades Craftsmen</u>	4,372	- 27
Compositors & Typesetters	2,817	- 499
Electrotypers & Stereotypers	108	- 50
Engravers except Photoengravers	56	+ 15
Photoengravers & Lithographers	231	+ 248
Pressmen & Plate Printers	1,160	+ 259



	<u>1960</u>	<u>1974</u>
<u>Transportation &amp; Public Utility Craftsmen</u>	5,028	+ 808
Linemen & Servicemen	3,974	+ 631
Locomotive Engineers	1,054	+ 177
Locomotive Firemen	NA	NA
<u>Other Craftsmen &amp; Kindred Workers</u>	12,973	+ 3,451
Bakers	1,696	- 159
Cabinetmakers	795	+ 171
Cranemen, Derrickmen, Hoistmen	1,027	+ 556
Glaziers	218	+ 147
Jewelers & Watchmakers	531	+ 168
Loom Fixers	NA	NA
Millers	472	- 163
Opticians & Lens Grinders	213	+ 69
Stationary Engineers	2,809	+ 263
Inspectors, Log & Lumber	62	+ 33
Inspectors, Other	1,129	+ 590
Upholsterers	625	+ 286
Craftsmen & Kindred Workers, NEC	3,396	+ 1,490
OPERATIVES & KINDRED WORKERS	84,358	+24,507
<u>Selected Trans. &amp; Utility Operators</u>	59,472	+17,119
Drivers, Bus, Truck, Tractor	48,377	+14,449
Deliverymen, Routemen, Cab Drivers	8,330	+ 1,943
Brakemen & Switchmen, Railroad	2,400	+ 694
Power Station Operators	331	+ 37
Sailors & Deck Hands	34	- 4
<u>Semiskilled Metalworking Occupations</u>	6,424	+ 2,668
Assemblers, Metalworking Class A	NA	NA
Assemblers, Metalworking Class B	NA	NA
Furnacemen, Smeltermen, Pourers	324	+ 49
Heaters, Metal	NA	NA
Machine Tool Operators Class B	NA	NA
Inspectors, Metalworking Class B	NA	NA
Welders & Flame Cutters	6,100	+ 2,619
Electroplaters	NA	NA
Electroplater Helpers	NA	NA

	<u>1960</u>	<u>1974</u>
<u>Semiskilled Textile Occupations</u>	2,440	+ 151
Knitters, Hoppers & Toppers	32	- 1
Spinners, Textile	15	- 7
Weavers, Textile	149	- 50
Sewers & Stitchers Mfg.	2,244	+ 209
<u>Asbestos &amp; Insulation Workers</u>	194	+ 36
<u>Other Operative &amp; Kindred Workers</u>	15,828	+ 4,533
Attendants, Auto Parking	7,391	+ 3,932
Blasters & powdermen	29	+ 11
Laundry & Dry Cleaning Workers	5,067	+ 284
Mine Operatives & Laborers, NEC	781	- 124
Meat Cutters, except Meatpacking	2,560	+ 430
Other Operatives, NEC	NA	NA
SERVICE WORKERS	108,601	+42,250
<u>Private Household Workers</u>	21,301	+ 3,380
<u>Protective Service Workers</u>	6,110	+ 2,078
Firemen, Fire Protection	1,328	+ 335
Policemen, Marshals, Sheriffs	2,715	+ 1,318
Guards, Watchmen	2,067	+ 425
<u>Waiters, Cooks &amp; Bartenders</u>	32,309	+13,458
Bartenders	2,735	+ 868
Cooks, except Private Household	11,217	+ 4,501
Counter & Fountain Workers	1,562	+ 1,035
Waiters & Waitresses	16,795	+ 7,054
<u>Other Service Workers</u>	48,881	+23,334
Airline Stewards & Stewardesses	NA	NA
Attendants, Hospital & Other	8,801	+10,103
Charwomen & Cleaners	2,678	+ 925
Janitors & Sextons	11,640	+ 1,086
Nurses, Practical	2,863	+ 2,458
Other Service Workers, NEC	22,899	+ 8,762
LABORERS, EXCEPT FARM & MINE	40,883	- 763
FARMERS & FARM WORKERS	204,651	-57,302

Table 1

## EMPLOYMENT OPPORTUNITIES RELATED TO VOCATIONAL EDUCATION PROGRAMS

## LABOR DEMAND AND SUPPLY SUMMARY

State IOWA

Fiscal Year Ending June 30, 1971

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1971	Other <sup>a</sup> 1971
01.01	421.181	Farmer	157,000	2,400	2,300		
01.01	096.128	Feed & farm management advisor	15	12	2		
01.01	409.168	Farm management	16	8		1,451	
01.01	421.883	Farm hand - general & grain	146	8	4		
01.01	413.887	Livestock yardman	2	3			
01.02	168.287	Inspector-grader grain-mill prdt	50	15	7		
01.02		Serviceman fertilizer	7	1			
01.02	162.168	Manager - grain elevator	36	2	4		
01.02	529.132	Feed mill operator-manager	50	8	8	1,401	
01.02	013.181	Agricultural technician	23	2			
01.03	624.281	Mechanic-farm equipment	315	54	25		
01.03	624.381	Farm equip. mechanics helper	21	3	4		
01.03	624.381	Farm equipment set up man	58	11	13		
01.03	223.387	Agriculture machinery parts man	22	2	2		
01.03	638.281	Mechanic-maintenance	13	2			119
01.03	409.883	Agriculture equipment operator	113	30	25		
01.0301	409.883	Farm equipment operator	4	4	3		
01.0301	620.281	Tractor mechanic	129	31	21		
01.04	521.887	Egg & poultry processing	81	4	2		

<sup>a</sup>Not available

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless otherwise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971	Voc. Ed. 1971	Other 1971
01.04	183.118	Supervisor-supt. dairy plant	10	2			
01.04	180.118	Field man - seed corn	17	2			
01.04	529.782	Dairy processing & equip. opers.	40	4	7		
01.04	525.	Meat processing	138	10	13		4
01.04	040.381	Seed processing specialist	21				
01.05	406.887	Nursery worker	158	22	12		
01.05	142.081	Floral designer	8	1	1		32
01.05	407.181	Landscaper	13	2			
04.0101	258.358	Salesman, advertising	30	2	1	34	
04.0102	263.358	Salesman, men & boys clothing	122	12	9		
04.0102	263.458	Salesperson, men's & boy's clothing	107	18	10		
04.0102	263.358	Salesman, footwear	142	24	13		281
04.0102	263.358	Salesman, shoe	33	3	2		
04.0102	263.358	Salesman, women & girls clothing	77	8	4		
04.0102	263.458	Salesperson, women & girls clothing	258	19	7	43	
04.0103	250.358	Salesman, automobile	230	45	6		
04.0103	267.358	Salesman, liquid propane	16				
04.0103	267.358	Salesman, petroleum products	2				152
04.0103	915.867	Service station attendant	1				
04.0103	223.387	Auto partsman	260	44	26	12	
04.0104	252.258	Salesman, financial	1				15
04.0104	186.288	Agricultural credit loans	1				
04.0105	262.358	Salesman, food products	95	9	11	252	
04.0108	289.458	Salesperson, general	897	59	91		404
04.0108	290.478	Sales clerk	1,030	98	83		

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971	Voc. Ed.	Other
						1971	1971
04.0109	276.358	Salesman, bldg. & construction equipment & supplies	39	2	4		
04.0109	277.358	Salesman, farm & garden equip. & supplies & livestock	105	16	26		
04.0109	277.358	Salesman, farm implements	167	15	14		
04.0109	262.358	Salesman, grain & feed products	41	2	7		
04.0109	276.358	Salesperson, hardware	112	10	5		
04.0109	276.358	Salesman, hardware	102	5	5 <sup>d</sup>		24
04.0109	003.151	Salesman, industrial	307 <sup>b</sup>	129 <sup>c</sup>	127 <sup>d</sup>	14	
04.0109	289.258	Salesperson, parts	145	10	11		
04.0109	289.358	Partsman, farm equipment	2		1		
04.0109	277.	Farm supply sales & service	231	251	34		
04.0109	277.358	Farm equip. sales & parts	10				
04.0109	277.	Farm equip. sales & service	50	7	4		
04.0109	185.168	Manager, retail feed store	29	1	1		
04.0112	250.258	Salesman, insurance	64	17	16	6	
04.0112	241.168	Agr. insurance claims adjusting	3				
04.0113	163.118	Sales manager	38	11	8	94	
04.0114	289.358	Salesman, general	1,297	115	165		13
04.0114	254.258	Sales representative	1,225	219	141		
04.0114	278.358	Salesman, appliance	186	23	12		
04.0114	263.458	Salesperson, drygoods	156	13	14		4
04.0114	274.358	Salesman, floor covering	7	3	4		
04.0114	260.458	Salesperson, flowers	17			1	
04.0114	274.358	Salesperson, furniture	107	14	9		
04.0114	282.258	Salesman, medical equipment and supplies	7				
04.0114	281.358	Salesman, office supplies and machines	28	3	2		

<sup>b</sup>1967  
<sup>c</sup>1968  
<sup>d</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless otherwise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1971	Other 1971
04.0114	278.358	Salesman, radio & TV parts	22	8	3		
04.0114	211.468	Cashier-wrapper	116	2	2		
04.0114	298.081	Display man	2	1			
04.0114	310.868	Hostess & or waitress	305	14	29		
04.0114	209.588	Marker	7				
04.0114	922.887	Warehouseman	21				
04.0114	262.358	Salesman, grain & feed	200	39	38		
04.0115	299.138	Manager, retail department	18			47	
04.0116	250.358	Salesman, real estate	46	9	9	4	
04.0117	292.358	Salesman, route	287	20	20	4	
04.0117	259.358	Salesman, softwater service	3	4			149
04.0118	255.258	Traffic agent	2			12	
07.0101	079.378	Dental Assistant	225	57	39	142	
07.0103	712.381	Dental laboratory technician	88	16	12	16	
07.0203	078.381	Medical laboratory assistant	169	29	26	110	
07.0204	075.378	Associate degree in nursing	1,383	230	264	93	
07.0205	079.378	Licensed practical nurse	812	210	118	1,015	
07.0206	355.878	Nurse aide - orderly	4,043	1,217	1,033	578	
07.0209	079.368	Inhalation therapist	24	8	11		
07.0211	078.368	X-ray technician	93	15	10		
07.0212	007.081	Optical technician	17	2	3		
07.0213	079.378	Surgical technician	77	35	29	48	
07.0214	079.368	Occupational therapy aid	34	15	6		
07.0215	079.378	Physical therapist	5			2	
07.0299	079.368	Medical assistants	203	51	27		
07.0299	219.388	Ward clerk	40	1			120
07.0304	913.883	Ambulance driver	1				

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1971	1971
07.0307	354.878	Home health aid				6	
07.0399		Environmental assistant				15	
07.0910		Orthopedic assistant				7	
09.0201	359.878	Child-care attendant				13	
09.0202	787.782	Sewing machine operator	733	176	186	11	
09.0202	785.281	Tailor (alteration)	72	22	11	11	
09.0202	363.782	Steam press operator	116	15	19		78
09.0202	362.782	Dry cleaning machine operator	28	3	1		
09.0202	729.381	Cutter fabric & leather	41	12	11		
09.0203	315.381	Cook	874	134	79	50	
09.0203	311.878	Car hop	35	17	6		
09.0203	311.878	Floor girl, cafeteria	80	15	7		
09.0203	311.878	Counterman	63	2			
09.0203	312.878	Bartender	108	8	3		
09.0203	311.878	Bus boy	269	31	27		
09.0203	311.878	Waiter & waitress	2,498	265	287		
09.0203	310.868	Hostess & host	147	35	21		655
09.0203	316.884	Meat cutter (butcher)	1,372	115	81	51	
09.0203	318.887	Kitchen helper	790	68	39		
09.0203	526.886	Baker's helper	28	6			
09.0203	187.168	Manager, food establishment	76	9	8		
09.0203	317.887	Cook's helper	489	55	29		
09.0203	526.781	Baker	251	40	63		
09.0203	313.131	Chef	106	49	39	27	
09.0204	780.884	Upholsterer	33	3	5		
09.0204	142.051	Interior decorator				127	

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1971-	Other 1971
14.0101	160.188	Accounting, farm records, farm tax, ag. econ.	19	2		16	
14.0102	210.388	Bookkeeper	3,161	281	218	51	96
14.0199	219.488	Accounting clerk	1,541	170	134		
14.0200	020.188	Programmer	5	2	2	297	
14.0201	213.382	Computer operator	253	37	40		
14.0202	213.782	Tabulating machine operator	44	2			
14.0204	012.168	Systems analyst	78	22	19	49	
14.0300	208.588	Transcribing machine operator	306	76	68		
14.0300	207.884	Duplicating machine operator	225	16	12		456
14.0300		Office machine operator	1,240	126	172		
14.0302	206.388	File clerk	158	21	14		
14.0303	209.388	Clerk, general	5,290	408	518	472	
14.0401	235.862	Telephone operator (PBX)	438	32	22		
14.0406	237.368	Receptionist	646	61	86	39	
14.0700	169.268	Educational secretary	15	9		7	
14.0702	202.388	Secretary - stenographer	5,134	598	480	536	
14.0704	201.368	Medical secretary	20	8		32	
14.0706	201.368	Legal secretary	70	26	10	16	
14.0805	169.168	Office manager	1			19	
14.0901	209.388	Clerk typist	2,596	323	218	123	
14.0902	213.582	Keypunch operator	830	112	77	96	
16.0105	022.281	Chemical technician	141	9	57		
16.0105	559.782	Chemical operator	66	5	5		
16.0106	182.168	Civil technician	418	2			
16.0106	182.168	Construction superintendent	13	5			171



Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1971	1971
16.0107	003.181	Electrical technician	135	27	20	8	
16.0108	003.181	Electronic technician	570	47	31	350	
16.0109	710.281	Electro-mechanical technician	12	4			
16.0112	003.281	Instrumentation technician	75	13	8		
16.0113.02	007.181	Mechanical technician	980	56	38	161	
16.0113.03	012.288	Industrial Eng. technician	74	2	1	6	
16.0114	011.281	Metallurgy technician	26	5			
17.0200	827.281	Household appliance repairman	719	195	180	8	
17.0200	639.381	Vending machine repairman	14	2			7
17.0200	723.884	Appliance service	89	14	10	12	
17.0300	620.281	Front end alignment man	113	35	14		7
17.0300	620.281	Brakeman, automobile	113	21	13		
17.0301	845.781	Auto spray painter	91	30	15		
17.0301	807.381	Auto body repairman	350	93	54		249
17.0302	620.381	Auto tuneup	265	66	70		
17.0302	620.281	Auto equip. maintenance service	7				
17.0302	915.867	Auto service station attendant	646	55	53	25	
17.0302	620.381	Auto air conditioning mechanic	53	21	28		714
17.0302	220.281	Auto maintenance mechanic	329	24	19		
17.0302	620.281	Auto mechanic	1,693	359	164		
17.0303	620.281	Transmission mechanic	74	13	7	6	
17.0399	919.883	Tow truck operator	5				
17.0399	915.884	Tire repairman	107	14	14		
17.0399	915.887	Lubricator	8				
17.0399	620.884	Use car appearance recon.	56	1			
17.0399	913.463	Taxi driver & bus driver	115	10	3		95
17.0399	904.883	Tractor trailer truck driver	1,964	300	203		
17.0399.02		Service station mechanic					

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless otherwise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1971	1971
17.0401		Airframe (certificated)	35 <sup>b</sup>		38 <sup>d</sup>		
17.0401		Airframe (noncertificated)	32 <sup>b</sup>		34 <sup>d</sup>		
17.0401		Powerplant (certificated)	29 <sup>b</sup>		35 <sup>d</sup>		
17.0401		Powerplant (noncertificated)	27 <sup>b</sup>		21 <sup>d</sup>		
17.0401		A & P certificate	135 <sup>b</sup>		186 <sup>d</sup>		
17.0401	825.381	Aircraft radio mechanic	4	1	2		68
17.0401	912.887	Aircraft refueler & service	32	6	4		
17.0401	710.281	Aircraft instrument repairman	17	2	2		
17.0401	621.381	Flight test shop mechanic	3	3	2		
17.0401	621.281	Aircraft engine tester	6 <sup>b</sup>	3	2 <sup>d</sup>		
17.0401	621.281	Airplane inspector	25 <sup>b</sup>		35 <sup>d</sup>		
17.0402		Pilot	194 <sup>b</sup>		250 <sup>d</sup>		
17.0403.02		Service (certificated)	77 <sup>b</sup>		109 <sup>d</sup>	6	
17.0600	633.281	Office machine repairman	42	22	9	4	
17.0700	142.081	Commercial artist	58	6	7	47	
17.0900	700.281	Jeweler	7	2			
17.0900	143.062	Photographer	126	10	9	25	
17.1001	860.381	Carpenter	1,980	570	351		
17.1001	869.381	House repairman	83	9	2		248
17.1001.02	864.781	Floor layer	153	26	13		
17.1001.02	866.381	Roofer	204	92	49		
17.1002	824.281	Electrician	971	152	75	17	
17.1003	922.883	Industrial truck operator	182	1	2		9
17.1003.02	859.883	Operating engineer	1,650	293	133		
17.1005	741.884	Painter	475	81	81	14	
17.1006	842.781	Plasterer	103	59	19		

<sup>b</sup>1967  
<sup>d</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless otherwise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971	Voc. Ed. 1971	Other 1971
17.1007	637.281	Gas serviceman	17	3	1		
17.1007	862.381	Plumber & pipefitter	891	271	116	12	7
17.1004	861.381	Bricklayer	421	187	84		
17.1099	844.884	Cement Mason	243	63	37	2	
17.1099	570.132	Batch & mix plant foreman	80	17	6		
17.1099	801.781	Iron worker	128	38	15		
17.1099	862.884	Laborer - construction	7,815	581	398		25
17.1099	922.887	Building materials specialist	13				
17.1099	929.137	Yardman, building materials	17	2	2		
17.1099	160.288	Estimator	137	19	15		
17.1100	382.884	Custodian	1,035	63	43	43	
17.1200	620.281	Heavy equipment mechanic	133	18	13		66
17.1200	620.281	Construction equipment mechanic	28	6	1		
17.1202	625.281	Diesel mechanic	229	72	28		
17.1300	007.281	Mechanical draftsman	469	65	86	89	
17.1300	005.281	Structural detailing draftsman	14	1	9	6	
17.1300	017.281	Map draftsman	51	12	6		63
17.1300	001.281	Architectural draftsman	533	177	203	33	
17.1300	005.281	Civil draftsman	30	2			
17.1300	003.281	Electrical draftsman	46 <sup>b</sup>	16	10		
17.1401	824.281	Electrician	939 <sup>b</sup>	161 <sup>c</sup>		19	
17.1402	821.381	Lineman	826	151	99	14	
17.1503	720.281	Television serviceman	122	19	20	80	
17.1602	369.884	Laundry operator	239	4	12	5	

<sup>b</sup>1967

<sup>c</sup>1968

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed.	Other
						1971	1971
17.1900	649.782	Papercutter	8				
17.1900	659.130	Foreman, print shop	130	11	7		
17.1900	627.28	Linotype machinist	29	2			
17.1900	973.381	General printer	23	1	3		
17.1900	651.782	Letter press printer	9	4	1		
17.1900	972.781	Platemaker offset	15				
17.1900	972.381	Platemaker (lithographer)	8	2	1		
17.1900	207.788	Printer, letterpress, offset, linotype	54	20	8		
17.1900	979.884	Silk screen printer	30	3	7		
17.1900	653.782	Folding machine operator	77	8	4		
17.1900	977.884	Bookbinder	305	24	18		
17.1900	973.381	Job printer	123	13	12		
17.1900	971.381	Photoengraver	74	7	6		
17.1900	651.782	Combination man in offset area	108 <sup>b</sup>	40 <sup>c</sup>	29 <sup>d</sup>		228
17.1900	972.382	Photolithography	117 <sup>b</sup>	26 <sup>c</sup>	27 <sup>d</sup>		
17.1900	651.886	Lithography pressman	286 <sup>b</sup>	52 <sup>c</sup>	49 <sup>d</sup>		
17.1900	971.281	Lithography composition	56 <sup>b</sup>	8 <sup>c</sup>	9 <sup>d</sup>		
17.1900	643.885	Bindery worker	519 <sup>b</sup>	51 <sup>c</sup>	28 <sup>d</sup>		
17.1900	751.782	Comb. man in letterpress area	330 <sup>b</sup>	98 <sup>c</sup>	19 <sup>d</sup>		
17.1900	973.381	Letterpress composition	207 <sup>b</sup>	24 <sup>c</sup>	18 <sup>d</sup>		
17.1900	651.782	Letter pressman	474 <sup>b</sup>	40 <sup>c</sup>	27 <sup>d</sup>		
17.1900	650.582	Machine composition (hot type)	301 <sup>b</sup>	56 <sup>c</sup>	58 <sup>d</sup>		
17.1900	975.782	Stereotyping	117 <sup>b</sup>	4 <sup>c</sup>	5 <sup>d</sup>		
17.1900		Lithography	100 <sup>b</sup>	17 <sup>c</sup>	14 <sup>d</sup>		
17.2100	710.281	Aircraft instrument repair	14 <sup>b</sup>		32 <sup>d</sup>		
17.2100	710.281	Electric meter repairman	14	6			3
17.2100	715.281	Watch repairman	15				

<sup>b</sup>1967  
<sup>c</sup>1968  
<sup>d</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971	Voc. Ed.	Other
						1971	1971
17.2301	518.782	Molder	229	37	60		
17.2301	518.381	Coremaker	70	11	9		8
17.2302	600.280	Machinist (job shop)	1,186 <sup>b</sup>	364 <sup>c</sup>	307 <sup>d</sup>	207	
17.2302.02	619.885	Machine operator	186	36	10		
17.2302.02	616.380	Set-up man	376	55	53		17
17.2302.02	616.380	Die setter	87	21	12		
17.2302.03	626.281	Machinery repairman	9 <sup>b</sup>			24	
17.2302.04	601.280	Tool & die maker	1,050 <sup>b</sup>	395 <sup>c</sup>	371 <sup>d</sup>	97	
17.2303	600.380	Machine set-up operator	8,947 <sup>b</sup>	2,327 <sup>c</sup>	2,140 <sup>d</sup>	4	
17.2305	304.281	Sheetmetal worker	1,201	159	264		
17.2305	804.281	Sheetmetal worker, refrig., heating & air conditioning	259	61	41		87
17.2306	812.884	Welder	2,184	346	271		
17.2306	600.381	Lay-out man	181	57	55 <sup>d</sup>		334
17.2306	812.887	Welder-combination	2,900 <sup>b</sup>	758 <sup>c</sup>	764 <sup>d</sup>		
17.2399	809.381	Fabricator, metal	28	3	6		
17.2399	609.381	Floor inspector	1,390	90	104		
17.2399	601.281	Gage inspector	40	7	6		
17.2399	609.684	General inspector	402	35	38		
17.2399	507.782	Heat treater	73	16	17		
17.2399		General purpose mechanic	21	2	2		
17.2399	827.884	Assemblers	3,344 <sup>b</sup>	913 <sup>c</sup>	922 <sup>d</sup>		15
17.2399	611.782	Forgepress operators	144 <sup>b</sup>	39 <sup>c</sup>	41 <sup>d</sup>		
17.2399	621.281	Hydraulic mechanic	234 <sup>b</sup>	81 <sup>c</sup>	94 <sup>d</sup>		
17.2399	638.281	Machine repairman	2,587 <sup>b</sup>	445 <sup>c</sup>	488 <sup>d</sup>		
17.2399	519.887	Moulder-foundry worker	2,879 <sup>b</sup>	1,625 <sup>c</sup>	1,479 <sup>d</sup>		
17.2399	600.280	Patternmaker	185 <sup>b</sup>	45 <sup>c</sup>	23 <sup>d</sup>		

<sup>b</sup>1967  
<sup>c</sup>1968  
<sup>d</sup>1970

Table 1 (Continued)

OE Code	D.O.T.	Occupational Title	Current Employment 1968 unless other- wise noted	Projected Labor Demand		Projected Labor Supply (output)	
				1969 unless otherwise noted	1971 unless otherwise noted	Voc. Ed. 1971	Other 1971
17.2602	332.271	Cosmetology	96			35	
17.2700	779.884	Plastics - molding	1,655	1,940	1,404 <sup>e</sup>		
17.2700	752.884	Plastics - thermoforming	180	267	206 <sup>e</sup>		
17.2700	754.884	Plastics - casting	205	210	67 <sup>e</sup>		
17.2700	754.884	Plastics - reinforcing	55	78	181 <sup>e</sup>	2	
17.2700	754.884	Plastics - foaming	18	22	23 <sup>e</sup>		
17.2700	754.884	Plastics - coating	9	10	3 <sup>e</sup>		
17.2801	373.884	Fireman	112	4	5		
17.2802	375.268	Patrolman	26				
17.2802	375.268	Policeman	132	16	20	21	
17.2899	188.188	Assessor	34	3	2		
17.2899	233.388	Mail carrier	121	5	7	2	
17.2899	232.368	Post office clerk	140	7	7		
17.3100	620.281	Motorcycle repairman	4				
17.3100	625.281	Small engine repair	7	2		12	
17.3100	623.281	Boat and motor repair	89 <sup>b</sup>	81 <sup>c</sup>	52 <sup>d</sup>		
17.3202	954.368	Water pollution control	29	2		27	
17.3400	365.381	Shoe service repair man	330	29	78		
17.3601	669.782	Wood worker	86	8			
17.3601	660.280	Cabinetmaker	36	9	8	54	
17.9900	040.081	Floriculture	28			30	
17.9900.01	730.281	Piano technician	32	39	40	6	
17.9900.02	828.281	Electric organ technician	28	26	32	9	
17.9900.03	730.281	Band & orchestra instrument repairman	53	42	39	6	

b<sub>1967</sub>  
c<sub>1968</sub>  
d<sub>1970</sub>  
e<sub>1973</sub>

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