

Alaska Occupational Outlook to 2005

by JoAnn Wilson and Dean Rasmussen

Alaska's occupational employment, including both wage and salary employment and self-employment, is projected to increase 14.8%, from 276,075 to 316,983, between 1994 and 2005. The nature of the jobs that will be generated by this growth reflects a variety of factors that will affect the economy and the job market. Some factors, such as the expected declines in crude oil production, timber harvesting, and seafood processing, will reduce employment in some industries and occupations. Other factors, such as the projected growth in hard rock mining and boosts in the transportation and trade industries, will cause other occupations to increase.

Shifts in industry employment will not affect the rankings of the major occupational groups

In 1994, the top four occupational groups in terms of total employment were administrative support workers; service workers; professional specialty workers; and operators, fabricators, and laborers. While these rankings are not expected to change by 2005, the relative share of some of these occupational groups will decrease while others will increase. Administrative support workers will remain the largest category, but its share of total employment will drop from 18.6% to 16.9%. Service workers, the second largest category, will increase from 15.8% of total employment to 16.2% in 2005, and professional specialty workers will increase one-half of a percent from 14.5% to 15.0%. The fourth largest category, operators, fabricators, and laborers, will decline slightly from 12.5% to 12.3%. While the relative share of these four occupational categories is projected to shift somewhat, their total share of employment in 1994 and 2005 will remain at about 60 percent. (See Table 1.)

Job openings can arise in two ways—growth and replacement needs

On average, 10,233 job openings are projected each year during the 1994-2005 period. These annual job openings will be a combination of employment growth and replacement needs—openings occurring when individuals permanently leave an occupation. Workers who change employers but remain employed in the same occupation are not included in counts of replacement needs because job changes by these individuals have no impact on the number of openings for persons desiring to enter an occupation. This is commonly referred to as turnover.

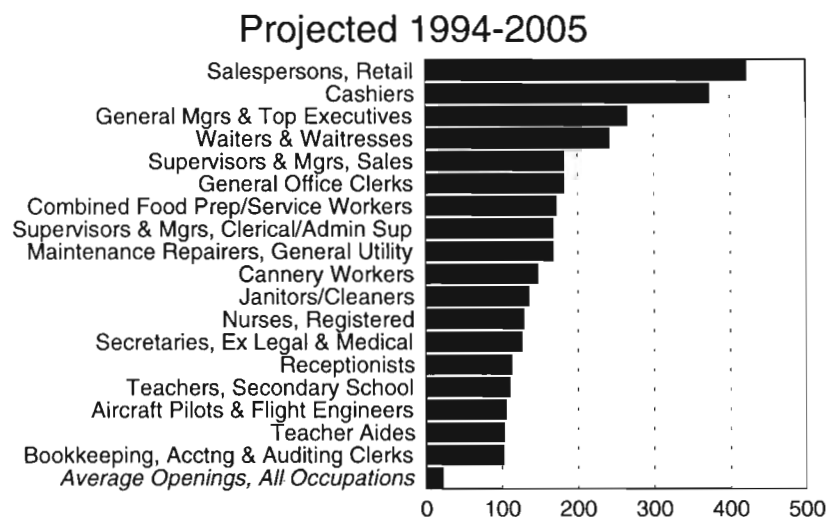
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Different ways to view employment opportunity

The number of annual job openings an occupation provides, its numerical growth during the projection period, and the occupa-

Figure • 1

Alaska Occupations with 100 or More Annual Job Openings



Source: Alaska Department of Labor, Research and Analysis Section.

Alaska Employment by Major Occupational Category Projected 1994-2005

Occupational Category	Employment		Change		Share of Total Employment (%)	
	1994	2005 (Projected)	Number	%	1994	2005 (Projected)
Executives, Administrators, & Managers	28,642	33,670	5,028	17.6	10.4	10.6
Professional Specialty Workers	40,068	47,627	7,559	18.9	14.5	15.0
Technicians	11,495	13,980	2,485	21.6	4.2	4.4
Marketing and Sales Workers	29,778	35,615	5,837	19.6	10.8	11.2
Administrative Support Workers, Incl. Clerical	51,424	53,717	2,293	4.5	18.6	16.9
Service Workers	43,553	51,494	7,941	18.2	15.8	16.2
Agriculture, Forestry, and Fishing Workers	3,808	4,379	571	15.0	1.4	1.4
Precision Production, Craft, and Repair Workers	32,867	37,473	4,606	14.0	11.9	11.8
Operators, Fabricators, and Laborers	34,440	39,028	4,588	13.3	12.5	12.3
Total, All Occupations	276,075	316,983	40,908	14.8	100.0	100.0

Source: Alaska Department of Labor, Research and Analysis Section.

tion's growth rate are three ways to "measure" employment opportunity. Large occupations, while often slow growing, may provide many more openings than rapidly growing occupations. (See Figure 1.) Many of these openings are for entry-level positions that do not require a college degree. Large occupations also tend to consist of a higher proportion of young and part-time workers than do smaller-sized occupations. Hence, replacement needs—rather than growth—are typically the major component of job openings in large occupations. Workers in many large occupations leave the occupation as they are promoted or change careers or return to school. In the list of Alaska occupations with at least 100 annual job openings, 62.5% of the job openings will occur due to replacement needs.

Of course, not all large occupations have low pay and low training requirements. The list of Alaska occupations with the most job openings between 1994 and 2005 includes general managers and top executives, registered nurses, and secondary school teachers. These three large occupations require the professional education and skills and

provide the compensation characteristic of small-sized or fast-growing occupations.

Retail salespersons are projected to employ the single largest number of workers in Alaska in 2005, with employment of 10,274. General managers and top executives will move up from third place in 1994 to second in 2005, with employment of 8,213, followed by cashiers at 7,581 and combined food preparation/service workers at 7,233. In 2005, one of every 10 Alaska workers will be employed in one of these four occupations. General office clerks and bookkeeping, accounting, and auditing clerks, the number two and four occupations in 1994, will slip to numbers five and six, respectively.

Service occupations are expected to add the most new jobs between 1994 and 2005. Of the nearly 8,000 new jobs to be added in this occupational category, over one-fourth will be either combined food preparation/service workers or waiters and waitresses. Workers in the professional specialty category make up the second largest group for prospective new jobs. Registered nurses leads this group with 779 of the 7,559 professional specialty

jobs to be added during the 11-year period, followed by systems analysts with an increase of 513 jobs. (See Table 2.)

Fast growing occupations are another source of employment opportunities for qualified applicants. Fast growing occupations are defined as those with 2005 employment of at least 50 and an average annual growth rate of at least 4.70%. (For additional information, see "Methodology.")

Twenty-seven occupations met both these criteria. (See Figure 2.) Over three out of four job openings projected in this list will result from growth; the remainder will be from replacement needs. The list of fast growing occupations during this projection period reflects the strong outlook for the industries where they are principally located: mining (except oil and gas); transportation, communications, utilities; and health services.

Occupations which are fast growing do not necessarily provide the largest number of jobs. For example, the employment of physical therapists will in-

Top 10 Occupations with Largest Numerical Increase in Employment—Projected 1994-2005

United States

- Cashiers
- Janitors and Cleaners
- Salespersons, Retail
- Waiters & Waitresses
- Nurses, Registered
- General Managers & Top Executives
- Systems Analysts
- Home Health Aides
- Guards
- Nursing Aides, Orderlies & Attendants

Alaska

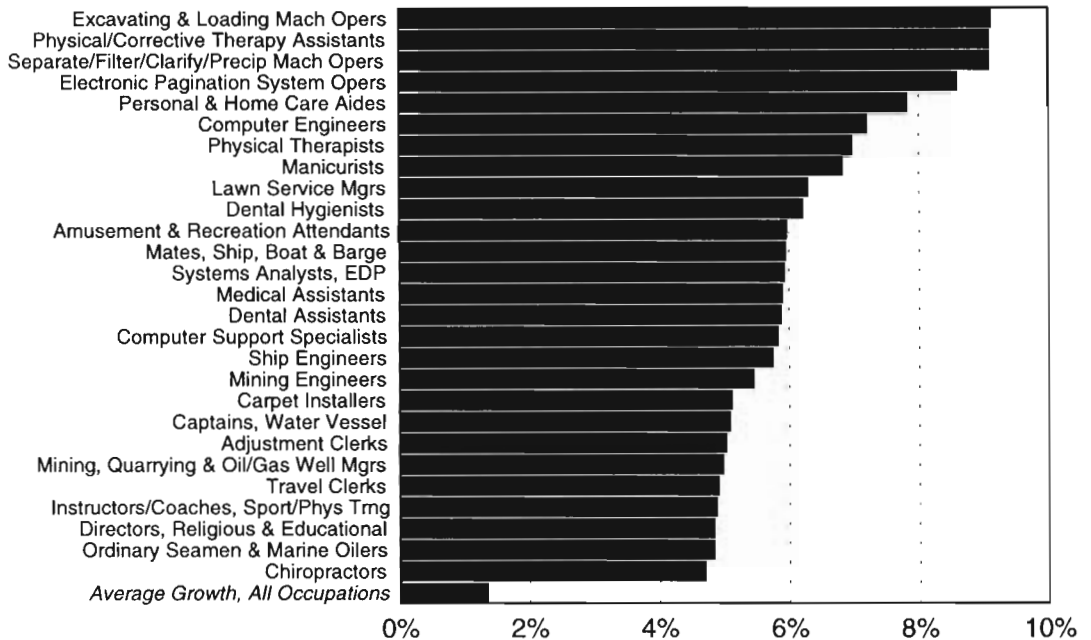
- Salespersons, Retail
- General Managers & Top Executives
- Cashiers
- Combined Food Preparation/Service Workers
- Supervisors & Managers, Sales
- Waiters & Waitresses
- Supervisors & Managers, Clerical/Admin. Sup.
- Maintenance Repairers, General Utility
- Nurses, Registered
- Receptionists

Source: Alaska Department of Labor, Research and Analysis Section.

Figure • 2

Fast Growing Alaska Occupations

Projected 1994-2005 (Average Annual Growth)



2005 employment = 50 or more

Source: Alaska Department of Labor, Research and Analysis Section.

¹When these projections were prepared, the status of the Ketchikan Pulp Mill was unclear. While the projected 2005 total employment for certain occupations would be affected by the mill's closure, the list of declining occupations would remain unchanged.

crease nearly four times as fast as that of registered nurses; however, the number of job openings will be much greater for nurses because it is a much larger occupation.

The fastest growing major occupational category is expected to be technicians with an overall growth rate of 21.6% for the 11-year period and an annual average rate of nearly two percent. This is more than twice the growth rate for technicians projected in a previous occupational forecast to the year 1999. The fastest growing occupation within this category is dental hygienists, projected to grow by an annual average rate of 6.2%. Other occupational categories showing strong annual average growth between 1994 and 2005 are marketing and sales workers (1.8%) and professional specialty workers (1.7%). Fastest growing occupations in these groups are travel agents (4.6%) and computer engineers (7.2%).

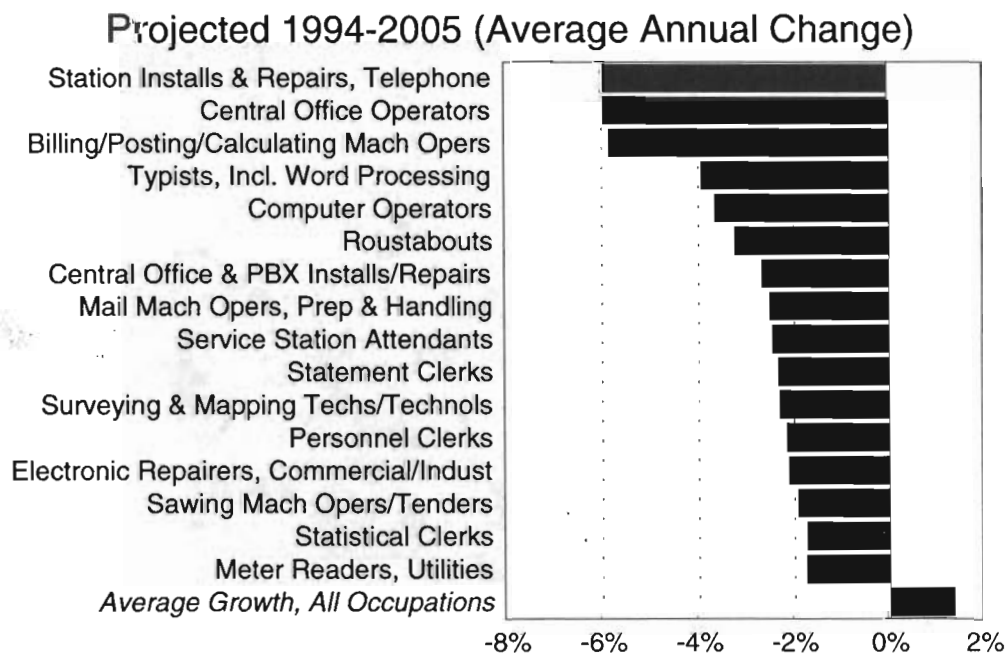
Not all occupations will show positive employment growth

Declining occupations are defined as those with 1994 employment of 50 or more and an annual rate of decrease in employment of -1.7% or more. Sixteen occupations meet these criteria. (See Figure 3.) Combined, these occupations will account for 1.1% of total 2005 employment, down from 2.0% in 1994.¹

Many declining occupations will be affected by changes resulting from technological advances, organizational shifts, and other factors that affect the employment of workers. For example, the occupation showing the fastest rate of decline, telephone station installers and repairers, has been negatively impacted by several factors including prewired buildings that enable customers to buy telephones and plug them into prewired jacks and a continued decline in telephone prices, making it more economical to replace

Figure • 3

Declining Alaska Occupations

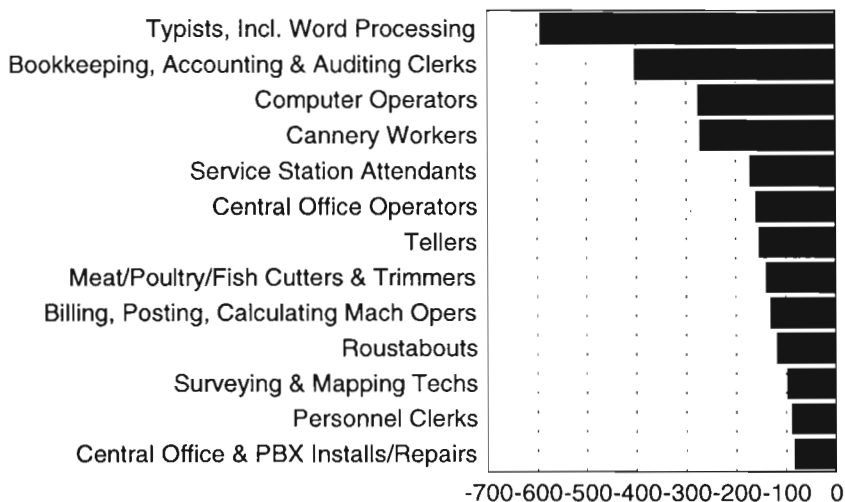


1994 employment = 50 or more
Source: Alaska Department of Labor, Research and Analysis Section.

Figure • 4

Alaska Occupations with the Largest Numerical Decrease in Total Employment

Projected 1994-2005

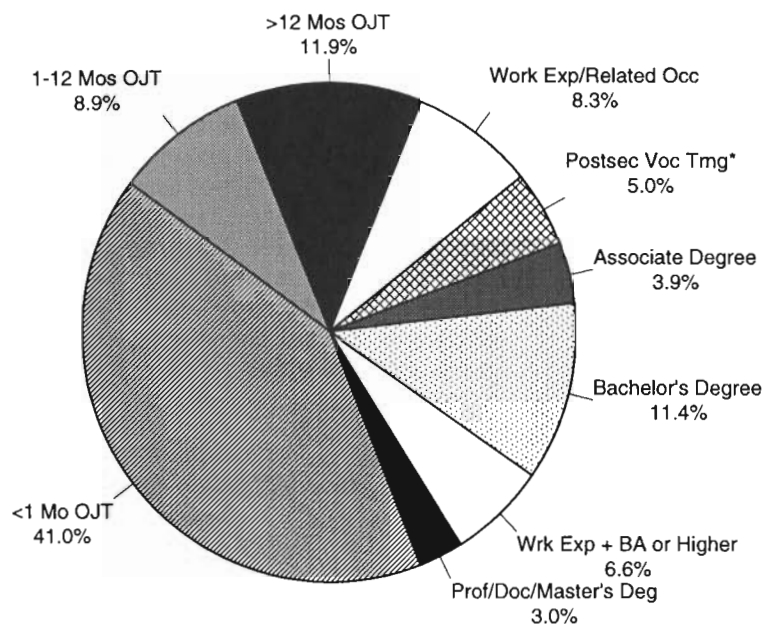


Source: Alaska Department of Labor, Research and Analysis Section.

Figure • 5

Percent of Annual Job Openings by Occupational Training Level

Alaska Occupational Forecast 1994-2005



OJT=On-the-Job Training

*Job-related programs of less than four years that may or may not result in a degree.

Source: Alaska Department of Labor, Research and Analysis Section.

Methodology

Occupational employment forecasts are the end product of a three-part system: employer surveys, construction of a matrix of industries and occupations, and industry employment forecasts.

Openings are the combined result of employment growth and net separations from the occupation. Net separations summarize movements of workers into and out of the occupation over a specific period.

Estimates of self-employed workers are made by applying ratios of self-employed workers in each occupation to estimates of wage and salary workers in the same occupation.

An occupation's average annual growth rate was computed by dividing its overall growth rate by 11, the total number of years covered by the forecast. The standardized scores (Zscores) for these average annual rates were used to determine fast growing and declining occupations. Zscores tell how many standard deviation units above or below the mean the percent of growth falls for each occupation. An average rate of growth was defined as Zscore = -.5 to +.5. Outlook above and below average was similarly based on a Zscore interval of ±1.0. Based upon the distribution of Zscores, fast growing occupations were defined as those with a Zscore of 1.5 and above, and declining occupations were defined as those with a Zscore of -1.5 or less. Using this approach, fast growing occupations were those whose annual average growth rate was 4.7% or greater, and declining occupations were those whose employment was decreasing at a rate of -1.7% or more.

telephone equipment than to repair it. The occupation projected to have the largest numerical decrease in total employment is typists, including word processors. (See Figure 4.) Demand for these workers is expected to decline substantially due to the increased use of word processing equipment by professional and managerial employees.

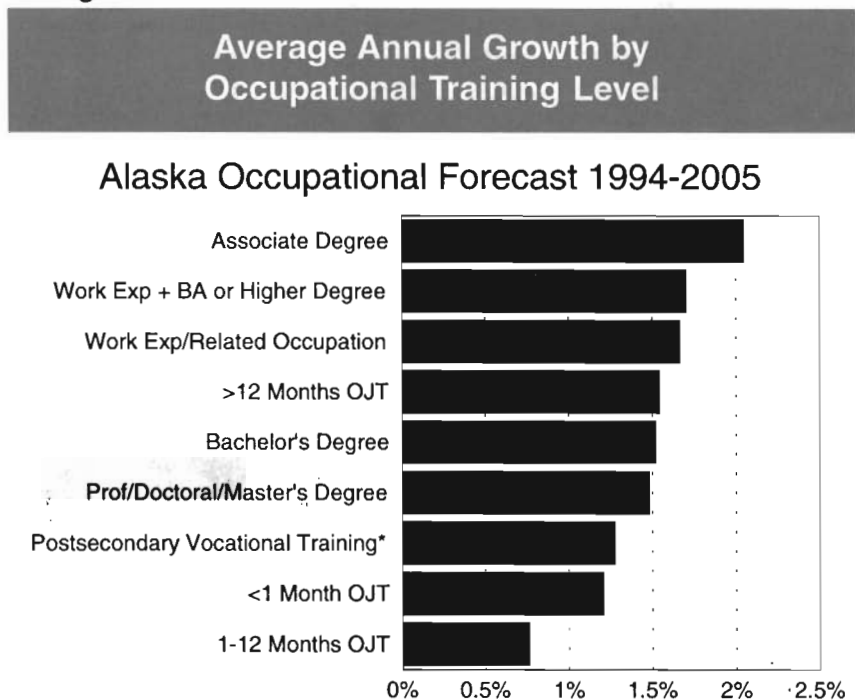
Alaska's changing industrial base is clearly reflected in the occupations which are declining as well as in those with the largest decreases in total employment over the 11-year period. Projected declines in the oil and gas industry reflect the expectation that Alaska production of crude petroleum will continue to decline. This activity directly affects the demand for roustabouts or petroleum helpers. Declines in the seafood processing industry are reflected in the decreased employment of cannery workers and meat/poultry/fish cutters and trimmers. The decline in sawing machine operators and tenders is attributable to setbacks in the timber industry.

Education and training affect job opportunities

Workers in jobs with low education and training requirements tend to have greater occupational mobility. Consequently, these jobs will provide the most openings during the 11-year period, the majority stemming from replacement needs. (See Figure 5.) About four of every 10 job openings will be for occupations requiring less than one month of on-the-job training. Adding in those openings that will require one to 12 months of on-the-job training, about half of total job openings over the 1994-2005 period will be for occupations that require only short-term or moderate-length training and experience.

While occupations requiring some sort of postsecondary training will provide less than one-third of the job openings during the projection period, those which require the most education and training will generally enjoy the fastest rates of growth. Occupations requiring an associate degree show the fastest growth rate of all training categories, followed by occupations requiring work experience plus a bachelor's degree or higher. (See Figure 6.) Occupations providing half of the job openings—those which belong to one of the two categories requiring the least amount of education and training—will experience the lowest rate of growth overall. However, there are notable exceptions. (See Table 3.) Several mining-related occupations which require only moderate-length training are projected to grow much faster than average during the period. In fact, excavating and loading machine operators has the fastest projected growth rate for all occupations. Other occupations in the health-care industry requiring moderate-length or short-term training are also projected to grow at a rapid pace, notably physical/corrective therapy assistants, medical assistants, dental assistants, and personal and home care aides.

Figure 6



OJT=On-the-Job Training
 *Job-related programs of less than four years that may or may not result in a degree.
 Source: Alaska Department of Labor, Research and Analysis Section.

Top Alaska Occupations by Level of Education and Training Projected 1994-2005

Occupations with Fastest Rate of Growth ¹	Annual Avg. Growth Rate (%)	Occupations with the Largest Numerical Increase in Employment	Numerical Increase 1994-2005
First Professional Degree			
Chiropractors	4.70	Physicians & Surgeons	336
Clergy	4.40	Dentists	104
Physicians & Surgeons	3.67	Chiropractors	59
Veterinarians & Veterinary Inspectors	3.62	Lawyers	50
Optometrists	2.85	Clergy	45
Master's Degree²			
Social Workers, Medical & Psychiatric	2.25	Social Workers, Medical & Psychiatric	170
Speech Pathologists & Audiologists	2.10	Management Analysts	89
Management Analysts	1.94	Speech Pathologists & Audiologists	49
		Psychologists	48
		Vocational & Educational Counselors	44
Work Experience + Bachelor's or Higher Degree			
Marketing, Advertising & PR Mgrs	3.51	General Mgrs & Top Executives	1,326
Personnel, Training, Labor Related Mgrs	2.86	Financial Mgrs	484
Financial Mgrs	2.81	Marketing, Advertising & PR Mgrs	245
Engineering/Math/Natural Science Mgrs	2.60	Administrative Services Mgrs	215
Administrative Services Mgrs	2.11	Engineering/Math/Natural Science Mgrs	178
Bachelor's Degree			
Computer Engineers	7.20	Systems Analysts, EDP	513
Physical Therapists	6.98	Teachers, Secondary School	420
Systems Analysts, EDP	5.93	Teachers, Special Education	372
Computer Support Specialists	5.83	Accountants & Auditors	296
Mining Engineers	5.45	Social Workers, Exc. Medical/Psychiatric	225
Associate Degree			
Dental Hygienists	6.22	Nurses, Registered	779
Veterinary Technicians	4.38	Dental Hygienists	268
Medical Record Technicians	4.35	Medical Record Technicians	109
Respiratory Therapists	4.11	Petroleum Technicians	79
Chemical Technicians	4.00	Paralegal Personnel	74
Postsecondary Vocational Training³			
Manicurists	6.82	Aircraft Mechanics	474
Travel Agents	4.63	Hairdressers	431
DP Equipment Repairers	4.12	Secretaries, Exc. Legal & Medical	373
Electric Motor/Related Repairers	3.92	Travel Agents	340
Secretaries, Medical	3.80	Welders & Cutters	202

(continued on page 8)

Table • 3 (cont.)

**Top Alaska Occupations by Level of Education and Training
Projected 1994-2005**

Occupations with Fastest Rate of Growth ¹	Annual Avg. Growth Rate (%)	Occupations with the Largest Numerical Increase in Employment	Numerical Increase 1994-2005
Work Experience/Related Occupation			
Lawn Service Mgrs	6.29	Supervisors & Mgrs, Sales	1,028
Mates, Ship, Boat & Barge	5.95	Supervisors & Mgrs, Clerical/Admin Support	829
Ship Engineers	5.75	Food Service & Lodging Mgrs	400
Captains, Water Vessel	5.09	Instructors, Nonvocational Education	153
Mining, Quarrying & Oil/Gas Well Mgrs	4.98	Teachers, Vocational Education	146
More Than 12 Months of On-the-Job Training			
Electronic Pagination System Operers	8.59	Maintenance Repairers, General Utility	799
Correction Officers & Jailers	3.77	Aircraft Pilots & Flight Engineers	617
Flight Attendants	3.75	Carpenters	357
Aircraft Pilots & Flight Engineers	3.50	Cooks, Restaurant	343
Producers/Directors/Actors/Oth Entertain	3.31	Automotive Mechanics	327
One to 12 Months of On-the-Job Training			
Excavating & Loading Mach Opers	9.12	Instructors/Coaches, Sport/Phys Trng	439
Physical/Corrective Therapy Assistants	9.09	Dental Assistants	394
Separate/Filter/Clarify/Precip Mach Opers	9.09	Excavating & Loading Mach Opers	280
Medical Assistants	5.89	Sales Reps, Exc. Scientific Prod & Retail	222
Dental Assistants	5.87	Painters/Paperhangers, Const/Maint	183
Less than One Month of On-the-Job Training			
Personal & Home Care Aides	7.82	Salespersons, Retail	1,860
Amusement & Recreation Attendants	5.96	Cashiers	1,295
Adjustment Clerks	5.02	Combined Food Preparation/Service Workers	1,126
Travel Clerks	4.91	Waiters & Waitresses	873
Ordinary Seamen & Marine Oilers	4.83	Receptionists	748

¹ Minimum 2005 employment=50

² Only three occupations requiring a master's degree are projected to grow at a rate exceeding the average annual rate for all occupations of 1.35% during the projection period. No occupations requiring a doctoral degree are expected to do so.

³ Job-related programs of less than four years that may or may not result in a degree.

Source: Alaska Department of Labor, Research and Analysis Section.