



# What Agricultural Research Means to Consumers

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## WHAT AGRICULTURAL RESEARCH MEANS TO CONSUMERS

R. G. Mason\*

### Summary & Conclusions

1. A quota sample of 140 households, representing a cross section of the adult urban population of Multnomah County (Portland), Oregon, was interviewed the week of June 21, 1959, by trained professional interviewers from an independent research organization. A standardized schedule containing both open-ended and closed items was used.

2. Items covered areas such as whether or not respondents had heard of the term "agricultural research," what it meant to them in their own words, how much they thought it helped consumers, in which way they thought it helped consumers, and who they thought conducted agricultural research. In addition, occupation of head of household, age, sex, education, and an estimate of social class position were obtained for each respondent.

3. Sample size was insufficient to control for combinations of demographic variables. Thus, analysis only of 2 x 2 tables was employed. Using a Chi-square test for independence, the following significant relationships were found. After Chi-square values were obtained, raw data were converted to percentages.

a. More older (50 & up) respondents and fewer younger (20-39) have only a grade school education.

b. More men, fewer women reported hearing of the term "agricultural research." More men, fewer women reported they thought OSC conducted agricultural research and received higher "agency scores" (an index of summed weights assigned for correct and incorrect answers to the item, "Who conducts agricultural research?") More women and fewer men reported they did not know who conducted agricultural research.

c. More upper class, fewer lower class respondents had a college education, and named USDA and OSC as agencies that conducted agricultural research. Fewer lower class respondents named "increase production," more said "don't know" and fewer middle class respondents named "increase production," in answer to the question of what the term "agricultural research" meant to them. In addition, upper class respondents had higher agency scores, lower class, lower scores.

d. More college-educated, fewer grade school only-educated reported USDA, OSC, or the agricultural industry conducts agricultural research. Fewer college-educated reported they did not know who conducted agricultural research.

e. Of those who said they had heard the term "agricultural research" more said agricultural research meant "increasing food production," fewer "didn't know." More who had not heard of the term "agricultural research" didn't know what it meant.

f. Of those who thought agricultural research helped consumers a lot, more thought it helped by "improving food quality," "increasing food quantity," and "lowering food costs;" fewer said they "didn't know." Of those who thought agricultural research helped consumers quite a bit, more again named all three ways in which they thought such research helped.

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g. Of those who thought agricultural research meant "increased production," more named "all three" (improve quality, increase production, lower cost), and fewer said they "didn't know", when it came to describing ways in which such research helped consumers. A sizable shift in those who thought the term "agricultural research" meant "increasing food production" thought such research helped consumers by "improving food quality."

4. There is a sizable minority in all social classes, ages, sexes, and educational levels who plead ignorance to any meaning of the term "agricultural research." In addition, there is a large majority who cannot name those who conduct agricultural research. A minority named incorrect agencies or individuals who they thought conducted agricultural research.

5. Causality cannot be inferred from this data, nor has unidimensionality of the attitude been demonstrated. In addition, one does not know how stable the image "agricultural research" is. Although the term appeared to connote a fairly favorable meaning for a majority of consumers, there is no evidence this connotation will remain when the term is linked with another term, such as an increase in taxes.

### Introduction

Public understanding of research activities carried out by Federal, State and Local agencies is essential in a democracy if such research is to continue to receive public support.

But support will be limited, in the long run, if research activities are viewed as helping only certain areas of the public, -- possibly at the expense of other "publics." This short description of consumer attitudes toward agricultural research was carried out to help clarify the meaning of the term "agricultural research" possessed by a cross-section of urban respondents.

It is hoped the findings of this study\* will enable those charged with conducting agricultural research and with disseminating research information, to better understand how one public -- consumers -- view research activities in agriculture.

### Methods

Sample. Sample for the survey consisted of 140 personal interviews, representing a cross-section of the adult urban population of Multnomah County, Oregon.

Multnomah County was sub-divided into 8 geographical areas, following major census boundary lines. A quota was then assigned to each sub-division based on population density, or the proportion of the County's population residing in that sector. Within each of the 8 areas, household interviews were further stratified by sex, age, economic level. The economic level distribution was made on the basis of socio-income data derived from recent consumer surveys conducted by the independent research organization who conducted the interviewing. Age and sex quotas were made on the basis of the best available census data.

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\*Funds were granted by the OSC Agricultural Research Foundation.

Field work for the study was conducted during the week of June 21, 1959, by professional interviewers of Clark, Bardsley, and Haslacher, an independent and impartial research organization with headquarters in Portland, Oregon.

Interview Schedule. A standardized schedule containing both open and closed questions was developed and pre-tested (Appendix A). Verification of proper interview functions was made by checking back on about one-third of the completed schedules.

Analysis. Code categories as well as coding of open-ended items were checked first by 2 coders working together, and verified later by 3 coders working independently. Data were coded, punched on IBM cards, and 2 x 2 tables tabulated with an IBM 101 statistical machine. Sample size was insufficient to control for combinations of demographic variables. Thus, analysis of 2 x 2 tables were employed. Chi-square tests for significance were made on raw data in all tables. After Chi-square values were obtained, data were converted to percentages for clarity. Percentages have been rounded to nearest percent to total 100%.

### Results

Code Categories. Question 2. -- "Just in your own words, what does the term 'agricultural research' mean to you?" Dimensions coded from this question included: 1) increase food production and efficiency, 2) improve food quality, 3) both 1 and 2; 4) negative -- waste tax money, result in production and acreage controls, etc.; 5) other; 6) don't know or no answer.

Question 4. -- In what way or ways do you feel agricultural research helps consumers? Dimensions coded were: 1) improving food quality, 2) increasing food quantity, 3) lowering food costs; 4) codes 1, 2, or 3 in any combination; 5) other; 6) don't know or no answer.

Question 5. -- Who would you say does agricultural research? "Other" answers were coded as follows: government (general) extension service-county agent, farm groups, city-county government, farmers, agricultural colleges (general), state department of agriculture, and other miscellaneous incorrect.

Agency Score. An index comprised of weights for correct and incorrect responses to item 5 ("Who would you say does agricultural research?") was constructed to handle the multiple answer response to this item. An arbitrary weight of "2" was assigned to a specific correct answer, such as USDA, OSC, or agricultural industry, a score of "1" to general correct answers, such as agricultural colleges in general. A score of -1 was assigned to each incorrect response, such as county agent, farm groups, etc. While this index has several limitations (e.g. a respondent could name USDA, county agent, and farmers and receive the same score (0) as a respondent who "didn't know") it is a relatively useful device for handling multiple responses.

Social Class Estimation. Interviewers estimated each respondent's social class position as either upper, middle, or lower. Criteria for these classification estimates were developed by the private research organization, and cannot be reported here. The fact that occupation is highly related with these strata can be noted by comparing the breakdown of occupation of heads of house hold by social class (Appendix B).

Result Tables. The following tables indicate study results:

Table 1. Levels of Significance for 2 X 2 Comparisons. Demographic Variables

	Age	Sex	Education	Social Class
Age - - - - -	--	ns	.05	ns
Sex - - - - -	ns	--	ns	ns
Education - - - - -	.05	ns	--	.01
Social Class - - - - -	ns	ns	.01	--
Heard term "Ag. Research" (Q. 1) - - - - -	ns	.05	ns	ns
What term "Ag. Research" means (Q. 2) - - -	ns	ns	ns	.05
How much Ag. Research helps consumers (Q. 3)	ns	ns	ns	ns
Which way Ag. Research helps (Q. 4) - - - -	ns	ns	ns	ns
Who does Ag. Research: (Q. 5)				
1. USDA (yes-no)- - - - -	ns	ns	.01	.01
2. Ag. Industry (yes-no)- - - - -	ns	ns	.01	ns
3. OSC (yes-no) - - - - -	ns	.01	.06	.05
4. Don't know (yes-no)- - - - -	ns	.01	.05	ns
5. Miscellaneous (correct-incorrect)-	ns	ns	ns	ns
6. Agency score - - - - -	ns	.01	ns	.05

Table 2. Education X Age

	20-29	30-39	40-49	50 & Up	Total
	%	%	%	%	%
College	18	36	34	27	(42)
High School	77	51	50	34	(70)
Grade	<u>5</u>	<u>13</u>	<u>16</u>	<u>39</u>	<u>(28)</u>
	*				
Total	100 (22)	100 (39)	100 (38)	100 (41)	100 (140)

$$\chi^2 = 18.57; P < .05$$

Source of significance: More 50 & Up and fewer 20-29; 30-39 have grade school education than would be expected by chance.

Table 3. Heard Term "Agriculture Research" X Sex

	Heard term "ag. research"			Total
	Yes	No	Don't Know	
	%	%	%	%
Male	84	12	4	100 (69)
Female	<u>65</u>	<u>32</u>	<u>3</u>	100 ( <u>71</u> )
Total	(104)	(31)	(5)	100(140)

$$\chi^2 = 8.82; P < .05$$

Source of significance: More men, fewer women have reported hearing of "Ag. Research" than would be expected by chance.

Table 4. OSC Does Agriculture Research X Sex

	Reported OSC does ag. research		Total
	Yes	No	
	%	%	%
Male	45	55	100 (69)
Female	<u>18</u>	<u>82</u>	100 ( <u>71</u> )
Total	<u>44</u> ( <del>72</del> )	<u>96</u> ( <del>40</del> )	100(140)

$$\chi^2 = 11.50; P < .05.$$

Source of significance: More men, fewer women reported they thought OSC conducted agricultural research than would be expected by chance.

\*Numbers in parentheses indicate raw totals.

Table 5. Don't Know Who Does Agriculture Research X Sex

	Reported "don't know" who does ag. research		
	Yes	No	Total
	%	%	%
Male	6	94	100 (69)
Female	<u>27</u>	<u>73</u>	100 ( <u>71</u> )
Total	(23)	(117)	100(140)

$$\chi^2 = 11.20; P < .01$$

Source of significance: More women, fewer men, reported they did not know who conducted agricultural research than would be expected by chance.

Table 6. Agency Score X Sex

	Score									Total
	-2	-1	0	1	2	3	4	5	6	%
	%	%	%	%	%	%	%	%	%	%
Male	4	6	12	15	38	4	20	1	0	100 (69)
Female	<u>1</u>	<u>10</u>	<u>34</u>	<u>20</u>	<u>24</u>	<u>7</u>	<u>1</u>	<u>0</u>	<u>3</u>	100 ( <u>71</u> )
Total	(4)	(11)	(32)	(24)	(43)	(8)	(15)	(1)	(2)	100(140)

$$\chi^2 = 27.11; P < .01$$

Source of significance: Men received more higher scores, women more lower scores than would be expected by chance.

Table 7. Education X Social Class

	College	High School	Grade School	Total
	%	%	%	%
Upper	71	25	4	100 (28)
Middle	26	55	19	100 (84)
Lower	<u>0</u>	<u>61</u>	<u>39</u>	100 ( <u>28</u> )
Total	(42)	(70)	(28)	100(140)

$$\chi^2 = 38.37; P < .01$$

Source of significance: More upper class, fewer lower class respondents had college education than would be expected by chance.

Table 8. Meaning of Term Agriculture Research X Social Class

	Meaning of ag. research						Total
	Increase Production	Improve Quality	Both	Negative	Other	Don't Know	
	%	%	%	%	%	%	%
Upper	43	11	11	11	21	3	100 (28)
Middle	45	12	15	4	14	10	100 (84)
Lower	<u>18</u>	<u>18</u>	<u>7</u>	<u>0</u>	<u>25</u>	<u>32</u>	100 <u>(28)</u>
Total	(55)	(18)	(18)	(6)	(25)	(18)	100(140)

$$\chi^2 = 22.39; P < .05$$

Source of significance: Fewer lower class respondents named "increase production", more "don't know"; fewer middle class respondents named "increase production" than would be expected by chance.

Table 9. USDA Does Agriculture Research X Social Class

	USDA does ag. research		
	Yes	No	Total
	%	%	%
Upper	57	43	100 (28)
Middle	36	64	100 (84)
Lower	<u>7</u>	<u>93</u>	100 <u>(28)</u>
Total	(48)	(92)	100(140)

$$\chi^2 = 15.72; P < .01$$

Source of significance: More upper class, fewer lower class respondents thought USDA conducted agricultural research than would be expected by chance.

Table 10. OSC Does Agriculture Research X Social Class

	OSC does ag. research		
	Yes	No	Total
	%	%	%
Upper	50	50	100 (28)
Middle	30	70	100 (84)
Lower	<u>18</u>	<u>82</u>	100 <u>(28)</u>
Total	(44)	(96)	100(140)

$$\chi^2 = 6.98; P < .05$$

Source of significance: More upper class, fewer lower class respondents thought OSC did agricultural research than would be expected by chance.



Table 11. Agency Score X Social Class

	Score									
	-2	-1	0	1	2	3	4	5	6	Total
	%	%	%	%	%	%	%	%	%	%
Upper	0	11	3	11	46	11	11	0	7	100 (28)
Middle	4	6	22	18	31	5	13	1	0	100 (84)
Lower	<u>4</u>	<u>11</u>	<u>42</u>	<u>21</u>	<u>14</u>	<u>4</u>	<u>4</u>	<u>0</u>	<u>0</u>	100 ( <u>28</u> )
Total	(4)	(11)	(32)	(24)	(43)	(8)	(15)	(1)	(2)	100(140)

$$\chi^2 = 29.38; P < .05$$

Source of significance: Upper class respondents had higher scores, lower class lower scores, than would be expected by chance.

Table 12. USDA Does Agriculture Research X Education

	USDA does ag. research		
	Yes	No	Total
	%	%	%
College	57	43	100 (42)
High School	29	71	100 (70)
Grade School	<u>14</u>	<u>86</u>	100 ( <u>28</u> )
Total	(48)	(92)	100(140)

$$\chi^2 = 15.72; P < .01$$

Source of significance: More college educated, fewer grade school-only educated reported USDA does agricultural research than would be expected by chance.

Table 13. Agricultural Industry Does Agriculture Research X Education

	Industry does ag. research		
	Yes	No	Total
	%	%	%
College	26	74	100 (42)
High School	3	97	100 (70)
Grade School	<u>4</u>	<u>96</u>	100 ( <u>28</u> )
Total	(14)	(126)	100(140)

$$\chi^2 = 17.49; P < .01$$

Source of significance: More college educated, fewer high school-only educated reported industry does agriculture research than would be expected by chance.

Table 14. OSC Does Agriculture Research X Education

	OSC does ag. research		
	Yes	No	Total
	%	%	%
College	45	55	100 (42)
High School	27	73	100 (70)
Grade School	<u>21</u>	<u>79</u>	100 ( <u>28</u> )
Total	(44)	(96)	100(140)

$$\chi^2 = 5.61; P < .06$$

Source of significance: More college-educated, fewer grade school-only educated reported OSC conducted agricultural research than would be expected by chance.

Table 15. Don't Know Who Does Agriculture Research X Education

	Don't know who does ag. research		
	Yes	No	Total
	%	%	%
College	2	98	100 (42)
High School	21	79	100 (70)
Grade School	<u>25</u>	<u>75</u>	100 ( <u>28</u> )
Total	(23)	(117)	100(140)

$$\chi^2 = 8.81; P < .05$$

Source of significance: Fewer college-educated reported they did not know who conducted agricultural research than would be expected by chance.

Table 16. Levels of Significance for 2 X 2 Comparisons,  
Non-demographic Variables

	Heard Term Ag. Research (Q. 1)	What Term Means (Q. 2)	How Much Helps (Q. 3)	In Which Way Helps (Q. 4)
Heard Term Ag. Research (Q. 1)	--	.05	--	ns
What Term Means (Q. 2)	.05	--	ns	.05
How Much Helps (Q. 3)	--	ns	--	.05
In Which Way Helps (Q. 4)	ns	.05	.05	--

Table 17. What Term Means (Q. 2) X Heard Term (Q. 1)

	What Term Means					Don't Know	Total
	Quantity %	Quality %	Both %	Negative %	Other %	%	%
Yes	45	16	14	4	14	7	100 (104)
No	20	6	10	6	29	29	100 (31)
Don't Know	<u>40</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>20</u>	<u>40</u>	100 <u>(5)</u>
Total	(55)	(18)	(18)	(6)	(25)	(18)	100 (140)

$$\chi^2 = 22.97: P < .05$$

Source of significance: Of those who had heard term, more said agricultural research meant quantity, fewer didn't know; more who had not heard the term didn't know, fewer named quantity, than could be expected by chance.

Table 18. In Which Way Agricultural Research Helps X How Much Helps Consumers

	Improve Quality	Improve Quantity	Lower Cost	All Three	Other	Don't Know	Total
	%	%	%	%	%	%	%
Helps a lot	39	7	0	41	7	6	100 (54)
Helps quite a bit	33	15	4	22	9	17	100 (46)
Helps a little	<u>28</u>	<u>5</u>	<u>0</u>	<u>17</u>	<u>5</u>	<u>45</u>	100 ( <u>18</u> )
Total	(41)	(12)	(2)	(35)	(9)	(19)	100(118)

$$\chi^2 = 22.81; P < .05$$

Source of significance: Of those who thought agricultural research helped a lot, more named all three, fewer didn't know; of those who thought agricultural research helped quite a bit, more named all three than would have been expected by chance.

Table 19. What Agricultural Research Means X How It Helps Consumers

	How ag. research helps consumers					Don't	Total
	Improves Quality	Increase Production	Lowest Cost	All Three	Other	Know	%
	%	%	%	%	%	%	%
Increases Production	31	13	0	35	5	16	100 (55)
Improve Quality	44	0	0	33	6	17	100 (18)
Both	39	5	0	28	5	23	100 (18)
Negative	16	0	16	16	0	52	100 (6)
Other	28	4	4	12	12	40	100 (25)
Don't Know	<u>11</u>	<u>17</u>	<u>0</u>	<u>5</u>	<u>5</u>	<u>62</u>	100 ( <u>18</u> )
Total	(42)	(12)	(2)	(35)	(9)	(40)	100(140)

$$\chi^2 = 43.75; P < .05$$

Source of significance: Of those who thought agricultural research meant "increased food production" more named "all three" (improve quality, increase production, lower cost), and fewer didn't know how agricultural research helped consumers, than would be expected by chance.

Also note: A sizable shift in those who thought agricultural research meant increasing food production, said they thought agricultural research helped consumers by improving food quality.

Table 20. Distribution of Responses to Question, "How Much Do You Feel Agriculture Research Helps Consumers?" (Q. 3)

	<u>No.</u>	<u>%</u>
1. Helped a lot - - - - -	54	39
2. Helped quite a bit - -	46	32
3. Helped a little- - - -	18	13
4. Helped not at all- - -	5	4
5. Don't know - - - - -	17	12
	<hr/>	<hr/>
	140	100

### Discussion

While these breakdowns give some insight into the relationships between demographic variables and how consumers relate the term "agricultural research" in their cognitive structure, there is a sizable minority -- in all social classes, ages, sexes, and educational levels -- who plead ignorance to any meaning of the term. In addition, there is a sizable majority who cannot name those who conduct agricultural research. A minority (31) also named incorrect agencies or individuals who they said conducted agricultural research.

This description of what consumers think of agricultural research has a number of limitations which also should be considered. For one, causality cannot be inferred. Second, unidimensionality of the attitude area has not been demonstrated. Thus, we cannot claim that all the variation we have related to "agricultural research" is structured along a single dimension. With a more sophisticated set of items, it may be shown that agricultural research is but one component of a more generalized "research" attitude continuum, or at least highly related to it. The term, however, may tap more than one dimension, depending possibly on the context in which the term is presented. In addition, we don't know how stable the "image" of agricultural research is. Although the term appeared to connote a fairly favorable meaning for a majority of consumers, we have no evidence this favorable connotation will remain when the term is linked with another term -- such as an increase in taxes.

While some of these limitations may be overcome by further research, results presented above can give those charged with telling the story of agricultural research to the public a better idea of what one segment of the public -- consumers -- think of agricultural research.

Appendix A. Interview Schedule.

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"Hello, I'm working on a public opinion survey, and would like to ask you a few interesting questions if you don't mind."

---

- 1- 1 Yes                      Have you ever heard of the term - "Agricultural  
2 No                          Research?"  
3 D.K.
- 

- 2- (Even though you have not heard of it), Just in your own words, what does the term -  
"Agricultural Research" - mean to you? (PROBE!) Anything else?
- 

- 3- 1 A lot                      How much do you feel agricultural research helps  
2 Quite a bit                  consumers -- a lot, quite a bit, a little, or  
3 A little                      not at all?  
4 Not at all (Skip to Q-5)  
5 D.K. (Skip to Q-5)
- 

ASK Q-4 ONLY IF ANSWER TO Q-3 WAS EITHER CODE 1, 2, or 3.

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- 4- In what way or ways do you feel agricultural research helps consumers? (PROBE!)  
Anything else?
- 

- 5- 1 U.S. Dept. of Agriculture  
2 Industry \_\_\_\_\_  
                                      \_\_\_\_\_  
                                      \_\_\_\_\_  
3 Oregon State College or Agricultural  
Experiment Station  
4 Other \_\_\_\_\_  
                                      \_\_\_\_\_  
                                      \_\_\_\_\_

Who would you say does agricultural  
research?

5 D.K.

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- 6- \_\_\_\_\_ Industry              What is the occupation of the head of the  
                                      \_\_\_\_\_ Specific Job      household?
- 

- 7- 1 College                      May I ask the last grade you completed in school?  
2 High School  
3 Grade or less
- 

- |           |              |          |
|-----------|--------------|----------|
| 8- 1 Male | 3 21-22      | 7 Upper  |
| 2 Female  | 4 30-39      | 8 Middle |
|           | 5 40-49      | 9 Lower  |
|           | 6 50 or over |          |
- 

\_\_\_\_\_ Telephone Number

\_\_\_\_\_ No Phone

Appendix B. Occupation of Head of Household X Social Class

UPPER

President - Title Insurance  
Manager - G.M.A.C.  
Salesman - Car  
Relator  
Manager - Dept. Store  
Contractor - Building  
Broker - Frozen Foods  
Owner - Oregon Laundry & Dry Cleaners  
Broker - Stock  
Real Estate  
Lawyer  
Consulting Engineer - Building  
Principal - Education  
Sales Manager - Trans.

Real Estate Broker & Farmer  
Attorney - Self Employed  
Lumberman (retired)  
Contractor - Apartment House  
Buyer - Heavy Machinery  
Salesman - Retail Furniture Dept. Store  
Furniture Salesman - Office Supplies  
Expeditor - National Biscuit Co.  
Public Accountant  
Instrument Technician - Lumber Industry  
Owner - Grocery Store  
Retired Business Man  
Owner - Night Club  
Owner - Insurance Agency

MIDDLE

Sales Manager - Television  
Photographer  
Retired Machinist  
Self Employed - Metal & Scrap  
Welder - Ornamental Iron  
Groceryman  
Construction - Runs Cat  
Landscape - Designer & Nurseryman  
Wholesale Dealer - Journal  
Retired Contractor - Builder  
Farmer (retired)  
Attendant - Service Station  
Clergyman  
Loan Examiner - Bank  
Farmer & Retired Photographer  
General Man - Auto Distributor  
Paint Maker - Miller Paint Co.  
Carrier (retired) - U.S. Post Office  
Engineer - Government  
Reporter - Associated Press  
Machine Installation - Heavy Machinery  
Teacher  
Postal Clerk - U.S. Government  
Insurance Selling  
Truck Driver - Heavy Equipment  
Warehouseman - Steel  
Warehouseman - General Commodity  
Accountant - U.S. Government  
Assistant Comptroller - Fred Meyer

Mail Handler - Post Office  
Deputy Sheriff (retired)  
Assistant Purchasing Agent - Heavy Equipment  
Unloader - Food Processing  
Sheet Metal Worker - Sheet Metal  
Milk Inspector - Dairy  
Carpenter - Railroad  
Pharmacist - Drug  
Carpenter (retired)  
Mechanic - Furnaces  
Sheet Metal Worker - Railroad  
Fireman - City Employed  
Dockman - Oil Company  
Printer - Manufacturing Company  
Recreation Dept. Clerk - Meier & Frank  
Telephone Lineman - Telephone Company  
Office Equipment - Services  
Electrician - Power Company  
Cab Driver - Taxi  
Truck Driver - Oil Company  
Salesman - Retail Dept. Store  
Lab Technician - Dairy  
Clerk - Railroad  
Housekeeper  
Pressman - Paper  
Mechanical Electrician - Electric Co.  
Dressmaker  
Checker - Longshore  
Weaver - Shingle

MIDDLE (con't.)

Engineer - Refrigeration  
Bookkeeper - Saw Manufacturer  
Machinist - Heavy Instrument  
Voice Teacher - Music  
Mechanic - Automobile  
Salesman - Automobile  
Lineman - Phone Company  
Dispatcher - Trucker  
Metal Worker - Sheet Metal  
Truck Driver - Dump Trucking  
Machinist - Manufacturing  
Freight Traffic Computed - Traffic  
Construction - Water Mains

Engineer (retired)  
Butcher (retired)  
Boiler Maker - Marine  
Teacher  
Broker - Timber  
Manager - Armour & Co.  
Bookkeeper - Lumber  
Garage  
Boiler Maker (retired) - Ship  
Claims Adjuster  
Scoop Operator - Sand & Gravel  
Conductor (retired) - Railroad

LOWER

Gardner - Northwest Memorial Gardens  
Attendant - Service Station  
Electrician - Marine  
Grocery Clerk  
Bricklayer - Building  
Sawyer - Logging  
Machinist - Manufacturing  
Fireman - Air Force  
Carpenter - Building  
Paint - Foundry  
Construction - Helper  
Helper - Manufacturing  
On Aid for Dependent Children  
Laborer

Machinist  
Clerk - Grocery Store  
Jitney Driver - Crown Mills  
Cafe Operator  
Night Shakeout Man - Steel Foundry  
Powderman & Driller - Construction  
Logger (retired)  
Woodworking - Lumber Manufacturing  
Construction - General  
Gardening - Services  
Serviceman - Concrete  
Boxer - Professional  
Sprays Paint - Barrelo  
Junk Dealer