

THE UNIVERSITY OF MICHIGAN  
INDUSTRY PROGRAM OF THE COLLEGE OF ENGINEERING

ANNUAL REPORT OF ENGINEERING PLACEMENT

John G. Young

October, 1962

IP-586

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
NUMBER OF GRADUATES.....	3
Comments.....	4
STUDENT AND ALUMNI ACTIVITY.....	5
Number of Students Interviewing.....	5
Number of Interviews Conducted.....	5
Average Number of Interviews per Student.....	5
Average Number of Plant Visit Invitations per Student.....	5
Average Number of Plant Visits Accepted per Student...	5
Interviewing by PhD Candidates.....	5
Postgraduate Plans.....	5
Number of Alumni Utilizing Placement Service.....	5
Comments.....	6
EMPLOYER ACTIVITY.....	7
Number of Employers Scheduling Interview Visits.....	7
Number of Interview Visits.....	7
Average Number of Offers per Student.....	7
Number of Employers Requesting Applicants by Mail.....	7
Comments.....	8
STARTING SALARIES ACCEPTED.....	9
Comments.....	10
POSITIONS ACCEPTED.....	11
By Location.....	11
By Type of Work.....	11
By Type of Industry.....	11
By Size of Employer's Organization.....	11
Comments.....	12

## ENGINEERING PLACEMENT

July 15, 1961 - July 16, 1962

Recruiting pressure for our graduates increased markedly throughout the year in contrast to the declining trend during the spring semester of last year. This increase was evidenced by a larger number of recruiting visits, in spite of a trend toward consolidation of recruiting by multi-division employers, and by an increase in starting salaries approximately equal to that of the preceding two years combined.

The most intense demand was felt in the aircraft, space, and electrical products industries for research and development activities. This was apparently responsible for increasing salary differentials and recruiting effort for high scholarship and advanced degrees. It is probably also responsible for an increased proportion of graduates starting on direct assignments rather than training programs and for a trend toward research industry, government, and education at the expense of manufacturing-oriented industry, construction, and consulting.

As anticipated last year, employer access to student credentials was extended from the Ph.D. to both MS and BS levels. About one-third of the employers who visited utilized this opportunity to some extent, and a special survey was conducted to determine the results from the standpoints of both students and employers. In general, the procedure was praised by both parties as beneficial to their interests, and it will therefore be continued next year and perhaps extended still further in the future. A more detailed report of the results of this study will be issued separately at a later date.

At this time there appears to be no reason to predict a reduction in demand next year and the supply of available graduates will again decrease. It is therefore expected that recruiting will be at least as strong or stronger during the coming year.

NUMBER OF GRADUATES

PROGRAM	B.S.			M.S.			Professional			Ph.D.			TOTAL IN EACH CLASS			TOTAL IN EACH PROG.	% IN EACH PROG.
	Aug '61	Feb '62	Jun '62	Aug '61	Feb '62	Jun '62	Aug '61	Feb '62	Jun '62	Feb '62	Jun '62	Aug '61	Feb '62	Jun '62			
Aero. & Astro.	8	23	35	4	8	17	2			2	2	2	14	33	56	103	10
Chemical	11	18	27	5	6	7					5	7	16	29	41	86	8
Civil	7	15	28	20	12	17					1	2	27	38	47	102	10
Electrical	31	58	65	10	18	25	1	1			4	3	42	81	93	216	21
Engrg. Math.	6	24	32								2		6	26	32	64	6
Engrg. Mech.	1	3	6	6	7	8					1	1	7	10	15	32	3
Engrg. Physics	2	4	9										2	4	9	15	1
Industrial	11	20	21	1	7	6		1					12	27	28	67	7
Instrumentation				20	6	7	1					3	21	6	10	37	4
Materials		2	1		1	1						1		3	3	6	1
Mechanical	19	35	50	8	20	18		1				2	27	60	70	157	15
Metallurgical	4	8	13		2	2						3	4	12	18	34	3
Meteorology		4	1											4	1	5	1
Nav. Arch. & Mar.	2	5	11	5	3	3							7	8	14	29	3
Nuclear				7	9	5						6	7	12	11	30	3
Science	4	10	21		1								4	11	21	36	4
TOTALS IN EACH CLASS	106	229	320	86	100	116	4	3	2	23	31	196	335	469	1020		100%
% IN EACH CLASS	16	35	49	29	33	38	50	33	17	43	57	19	35	46			
TOTALS AT EACH DEGREE LEVEL		665			302			9		54			1020				
% AT EACH DEGREE LEVEL		64%			30%			1%		5%			100%				

COMMENTS

The total number of graduates declined by slightly less than 1% compared to last year.

The number of Chemical graduates held even with last year after declining for several years, whereas Electricals, after several years of increase, dropped slightly as a result of a decrease of 20% in the number of MS degrees. Civil and Mechanical also decreased significantly, but Industrial and all of the smaller programs, except Materials and Nuclear, showed increases.

The proportion of graduates in each class and at each degree level again showed no significant change in comparison with the last several years.

STUDENT AND ALUMNI ACTIVITY

NUMBER OF STUDENTS INTERVIEWING	BS	MS	PhD	Total
Citizens* for Regular Employment	397	169	59	625
Citizens for Summer Employment	200	58	32	290
Non-Citizens	66	54	30	150
<b>Totals</b>	<b>663</b>	<b>281</b>	<b>121</b>	<b>1065</b>

NUMBER OF INTERVIEWS CONDUCTED	Fall	Spring	Total
FOR REGULAR EMPLOYMENT			
By Engineers (Citizens & Non-Citizens)	2332	3491	5823
By Non-engineers	76	102	178
FOR SUMMER EMPLOYMENT	139	905	1044
<b>Totals</b>	<b>2547</b>	<b>4498</b>	<b>7045</b>

AVERAGE NUMBER OF INTERVIEWS PER CITIZEN ACCEPTING REGULAR EMPLOYMENT	BS	MS	PhD	Total
	10.4	8.7	6.9	9.8

AVERAGE NUMBER OF PLANT VISIT INVITATIONS PER CITIZEN ACCEPTING REGULAR EMPLOYMENT	BS	MS	PhD	Total
	3.1	5.1	6.6	3.8

AVERAGE NUMBER OF PLANT VISITS ACCEPTED PER CITIZEN ACCEPTING REGULAR EMPLOYMENT	BS	MS	PhD	Total
	2.3	3.4	5.5	2.8

INTERVIEWING BY PhD CANDIDATES	Degree Expected		Total
	In '62	After '62	
Number of Candidates Interviewing	56	42	98
Number of Interviews Taken	291	127	418
Average Interviews per Candidate	5.2	3.0	4.3

POSTGRADUATE PLANS REPORTED BY CITIZENS

	BS		MS		PhD		Total	
	No.	%	No.	%	No.	%	No.	%
To Accept Reg. Emplm't	193	58	52	48	25	93	270	58
To Continue School	103	31	35	32	0	0	138	29
To Military Service	36	11	21	20	2	7	59	13
<b>Totals</b>	<b>332</b>	<b>100</b>	<b>108</b>	<b>100</b>	<b>27</b>	<b>100</b>	<b>467</b>	<b>100</b>

NUMBER OF ALUMNI UTILIZING PLACEMENT SERVICE..... 147

\* "Citizen" and "Non-citizen" refers to U.S. citizenship. Most non-citizens are available for temporary "practical training" employment only, usually for eighteen months following graduation.

COMMENTS

The total number of students interviewing decreased by about 12%, but the major part of the decrease was in interviewing for summer rather than for regular employment.

The number of interviews conducted was practically the same as last year, in spite of the decrease in students interviewing, as a result of an increase in the number of interviews per student, which returned to the level of two years ago.

The number of plant visit invitations and acceptances increased somewhat over last year, but did not attain the 1960 level.

The proportion of graduates accepting regular employment regained part of last year's decrease, entirely as a result of a smaller proportion of graduate level students planning to continue school.



EMPLOYER ACTIVITY

NUMBER OF EMPLOYERS SCHEDULING INTERVIEW VISITS

Fall	Spring	Total
277	375	445*

NUMBER OF INTERVIEW VISITS BY INDUSTRIES	Visits Scheduled	Visits Canceled	Visits Completed	
			No.	% of 614
Aircraft and Missiles	83	6	77	13
Electrical Products	103	13	90	15
Chemical Products	199	22	177	29
Food	13	1	12	2
Automotive and Parts	8	2	6	1
Other Mechanical Products	89	12	77	13
Heavy Machinery & Equip.	22	4	18	3
Steel & Metallurgical	41	8	33	5
Construction, inc. Shipbldg.	10	0	10	1
Utilities, inc. Transportation	36	4	32	5
State & Local Gov't.	11	2	9	1
Federal Gov't.	57	10	47	8
Education and Research				
Related to Education	13	1	12	2
Consulting Engineering	14	0	14	2
Totals	699	85	614	100

\* This total is the number of separate employers who scheduled visits during the year. Since 241, or more than half of these, scheduled more than one visit, this total is not equal to the sum of the numbers of employers for fall and spring.

BY SIZE OF EMPLOYER'S ORGANIZATION

Large (Over 5000 employees)  
 Medium (Between 500-5000 employees)  
 Small (Less than 500 employees)

Totals

Visits Scheduled	
No.	%
451	64
208	30
40	6
699	100

AVERAGE NUMBER OF OFFERS PER CITIZEN  
 ACCEPTING REGULAR EMPLOYMENT

BS	MS	PhD	Total
4.1	5.3	4.9	4.4

NUMBER OF EMPLOYERS REQUESTING APPLICANTS BY MAIL

Students for Regular Employment..... 260  
 Students for Summer and Part-time..... 38  
 Alumni with Experience..... 533

COMMENTS

The number of employers and scheduled interview visits both declined 6%, largely because of a decrease of 14% in the number of visits scheduled by chemical companies. The proportion of cancellations, however, decreased from 20% to 12% resulting in an increase of 3% in the total number of visits actually completed.

The distribution of employers by size was identical with last year.

The average number of offers per student increased to 4.4 from 3.5 last year, but did not reach the 5.2 reported in 1960.

The number of employers requesting student applicants for regular employment by mail increased by over 40% compared to last year.

STARTING SALARIES ACCEPTED  
(By citizens for regular employment)

Program	BS		MS		PhD	
	No.	Aver.	No.	Aver.	No.	Aver.
Aero. & Astro.	25	\$574	5	\$753	1	\$1000
Chemical	14	573	9	669	3	919
Civil	8	544	5	592	2	825
Electrical	47	573	16	740	2	933
Engineering Mechanics	2	592	5	774		
Industrial	13	564				
Instrumentation			1	675	1	1000
Materials	1	535				
Mathematics	2	598				
Mechanical	49	564	13	698	3	917
Metallurgical	3	560	1	875	4	911
Naval Arch. & Marine	4	556				
Nuclear			2	680	4	871
Physics	4	570			1	1000
Science	14	563				
Combined	20	584				
Total	206		57		21	
Average		\$569		\$709		\$920

COMMENTS

Starting salaries reported increased 5% at the B.S. level, 7% at the M.S., and 12% at the Ph.D., indicating an overall percentage increase approximately equal to that of the previous two years combined.

The overall average of \$569 reported by U. of M. B.S. graduates compared very closely to the national survey of \$570 reported by the College Placement Council.

Of the major programs at the B.S. level, Aero. & Astro., Electrical, and Chemical comprised the highest salary group at \$573; Industrial, Mechanical, and Science comprised a second group at \$564; and Civil was lowest at \$544.

The average differential for an M.S. degree compared to B.S. was \$170 for Aero. & Astro. and Electrical; \$134 for Mechanical; \$97 for Chemical; and only \$50 for Civil.

POSITIONS ACCEPTED

(By citizens for regular employment)

<u>BY LOCATION</u> (270 reported)	<u>%</u>	<u>BY TYPE OF WORK</u> (272 reported)	<u>%</u>
Michigan	25	Training Program	30
Other Midwest	21	Research & Development	39
East	21	Design or Systems Engrg.	21
West	30	Operations or Production	6
Other	<u>3</u>	Sales	1
	100	Teaching	<u>3</u>
			100

BY TYPE OF INDUSTRY (271 reported)

<u>Manufacturing</u>	<u>%</u>	<u>Services</u>	<u>%</u>
Aircraft & Missiles	35	Construction, inc. Shipbldg.	3
Electrical Products	18	Utilities, inc. Transportation	2
Chemical Products	11	Consulting Engineering	3
Food	0	State & Local Gov't.	3
Automotive & Parts	7	Federal Gov't.	6
Other Mechanical Products	3	Education or Research	
Heavy Machinery & Equip.	2	Related to Education	<u>7</u>
Steel & Metallurgical	<u>0</u>		24
	76		

BY SIZE OF EMPLOYER'S ORGANIZATION (270 reported)

	<u>%</u>
Large (More than 5000 Employees)	<u>60</u>
Medium (Between 500-5000 Employees)	34
Small (Less than 500 Employees)	<u>6</u>
	100

COMMENTS

The proportion of graduates starting work in Michigan declined from 31% to 25%, although the total proportion starting in Michigan and the Midwest combined rose 2% above last year. The proportion starting in the West also increased by 2%, continuing the trend away from the East.

The proportion of graduates starting in training programs declined by 7% this year after several years of rapid increase. This reduction was matched by an increase of 7% in those starting on direct assignments in Research and Development. The proportion in Operations or Production also declined significantly from 9% to 6%, with corresponding increases in Design and Teaching.

Aircraft and Missiles and Electrical Products continue to claim an increasing proportion of graduates at the expense of the Chemical, Automotive, and Steel industries. The proportion entering other than manufacturing industries was only 1% less than last year, but the Federal Government and Education increased somewhat at the expense of Construction and Consulting.

The proportion of graduates starting with Large employers seems to have leveled off at about 60%, but the proportion starting with Small employers continued a decline which has been evident throughout the past seven years for which data are available, from 20% in 1956 to the 6% indicated above.



