A study of the possibilities of cooperation between the General Electric Company and Pittsfield School Department in the improvement of the present program of vocational education.

A STUDY OF THE POSSIBILITIES OF COOPERATION BETWEEN THE GENERAL ELECTRIC COMPANY AND PITTSFIELD SCHOOL DEPARTMENT IN THE IMPROVEMENT OF THE PRESENT PROGRAM OF VOCATIONAL EDUCATION

MORAN - 1938

A STUDY OF THE POSSIBILITIES OF COOPERATION BETWEEN THE GENERAL ELECTRIC COMPANY AND PITTSFIELD SCHOOL DEPARTMENT IN THE IMPROVEMENT OF THE PRESENT PROGRAM OF VOCATIONAL EDUCATION

by

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CHAPTER I

INTRODUCTION

This study had its origin in a course pursued by the writer entitled "A Sociological Philosophy of Education." The emphasis placed upon the necessity for cooperation between school and industry in the organization of a program of vocational education led to a determination on the part of the author to make a study of the possibilities of a working arrangement between the school system and the largest industry in the city. Encouragement in such a project was also given by the State Director of Vocational Education.

There are many reasons why such a study is both timely and necessary. At present there is no adequate vocational program in Berkshire County. In the Pittsfield Public School system a beginning was made (April 1934) by the establishment of a General Vocational Department for boys. This department was organized principally to serve those boys who were not profiting by the regular academic program and who expected to leave school for work at the earliest opportunity. Training was offered in general woodworking, painting and woodfinishing and operation of printing presses. In September of 1934 there was added a General Vocational Department for girls which offered to those who did not meet the entrance requirements for high school, courses in Foods, Clothing and Home Management. In the senior high school there had been in operation since 1920 a state-aided Household Arts course for girls. This course offered to high school girls training in Foods, Clothing,

Table 1. Age-Grade Table: (A) Number (5,103) Of Different Resident and Non-Resident Minors (14-16 years of age) Employed in Pittsfield (1921-1933):

(B) Grades Left All (5,073) Minors (14-16) Certificated by Pittsfield (1921-1933).

A.				B. Grades Left by 5,073 Minors											
Number (5,013) of Different Minor Employed				Retarded			Normal						Accelerated		
			Normal Ages	6 9	10	11	12	13	14	15	16	17	18		
Year	Boys	Girls	Total	Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th	
1933	42	98	140												
			Boys	-	1	-	12	12	8	3	6	-	-	-	42
			Girls	-	4	1	10	28	28	18	7	1	-	-	97
			Total	-	5	1	22	40	36	21	13	1	-	-	139
				68-48.9%					57=41%			14=10.1%			
				Boys: 25; Girls: 43					Boys: 11			Boys: 6; Girls: 8			
									Girls: 46						
1932	96	125	221												
			Boys	1	1	3	24	27	20	15	5	-	-	-	96
			Girls	-	-	-	17	45	36	19	7	1	-	-	125
			Total	1	1	3	41	72	56	34	12	1	-	-	221
				118=53.4%					90=40.7%			13=5.9%			
				Boys: 56; Girls: 62					Boys: 35			Boys: 5; Girls: 8			
									Girls: 55						

A. Number (5,013) of Different Minor Employed			B. Grades Left by 5,073 Minors										
			Retarded		Normal						Accelerated		
		Normal Ages	6 9	10	11	12	13	14	15	16	17	18	
Year	Boys	Girls	Total	Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th	
1931	155	169	324												
			Boys	1	1	5	44	45	35	23	3	-	-	-	157
			Girls	-	-	1	31	47	58	26	5	1	-	-	169
			Total	1	1	6	75	92	93	49	8	1	-	-	326
				175=53.7%					142=43.5%			9=2.8%			
				Boys: 96; Girls: 79					Boys: 58 Girls: 84			Boys: 3; Girls: 6			
1930	260	251	511												
			Boys	3	2	6	105	71	50	20	2	-	-	-	259
			Girls	-	2	9	88	70	52	32	2	-	-	-	255
			Total	3	4	15	193	141	102	52	4	-	-	-	514
				356=69.3%					154=29.9%			4=0.8%			
				Boys: 187; Girls: 169					Boys: 70 Girls: 84			Boys: 2; Girls: 2			
1929	303	299	602												
			Boys	1	1	6	132	75	57	29	3	-	-	-	304
			Girls	-	1	13	115	88	53	27	3	-	-	-	300
			Total	1	2	19	247	163	110	56	6	-	-	-	604
				432=71.5%					166=27.5%			6=1%			
				Boys: 215; Girls: 217					Boys: 86 Girls: 80			Boys: 3; Girls: 3			

A. Number (5,013) of Different Minor Employed				B. Grades Left by 5,073 Minors											
				Retarded			Normal						Accelerated		
			Normal Ages	6	9	10	11	12	13	14	15	16	17	18	
				9	10	11	12	13	14	15	16	17	18		
Year	Boys	Girls	Total	Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th	
1928	236	263	499												
			Boys	-	-	1	91	64	57	17	6	-	-	-	236
			Girls	-	-	3	111	84	48	14	2	-	-	-	262
			Total	-	-	4	202	148	105	31	8	-	-	-	498
				354=71.1%					136=27.3%			8=1.6%			
				Boys: 156; Girls: 198					Boys: 74 Girls: 62			Boys: 6; Girls: 2			
1927	193	208	401												
			Boys	-	-	2	74	49	42	16	6	2	-	-	191
			Girls	-	-	-	89	57	40	17	3	-	-	-	206
			Total	-	-	2	163	106	82	33	9	2	-	-	397
				271=68.3%					115=28.9%			11=2.8%			
				Boys: 125; Girls: 146					Boys: 58 Girls: 57			Boys: 8; Girls: 3			
1926	224	168	392												
			Boys	-	-	2	75	67	44	21	7	2	-	-	218
			Girls	-	-	-	64	48	37	15	3	1	-	-	168
			Total	-	-	2	139	115	81	36	10	3	-	-	386
				256=66.3%					117=30.3%			13=3.4%			
				Boys: 144; Girls: 112					Boys: 65 Girls: 52			Boys: 9; Girls: 4			

A. Number (5,013) of Different Minor Employed			B. Grades Left by 5,073 Minors											
			Retarded				Normal				Accelerated			
		Normal Ages	6	9	10	11	12	13	14	15	16	17	18	
			9	10	11	12	13	14	15	16	17	18		
Year	Boys	Girls	Total	Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th
1925	235	176	411											
			Boys	-	-	1	68	80	50	24	5	-	1	-	229
			Girls	-	-	1	51	60	42	15	5	-	-	-	174
			Total	-	-	2	119	140	92	39	10	-	1	-	403
				261=64.8%					131=32.5%			11=2.7%		
				Boys: 149; Girls: 112					Boys: 74 Girls: 57			Boys: 6; Girls: 5		
1924	240	201	441											
			Boys	-	-	2	97	72	46	10	9	-	1	-	237
			Girls	-	-	1	76	69	34	8	10	-	-	-	198
			Total	-	-	3	173	141	80	18	19	-	1	-	435
				317=72.9%					98=22.5%			20=4.6%		
				Boys: 171; Girls: 146					Boys: 56 Girls: 42			Boys: 10; Girls: 10		
1923	265	197	462											
			Boys	-	-	2	94	72	56	16	18	3	-	-	261
			Girls	-	-	1	55	56	46	19	13	1	-	-	191
			Total	-	-	3	149	128	102	35	31	4	-	-	452
				280=61.9%					137=30.3%			35=7.8%		
				Boys: 168; Girls: 112					Boys: 72 Girls: 65			Boys: 8; Girls: 9		

A.				B. Grades Left by 5,073 Minors											
Number (5,013) of				Retarded				Normal				Accelerated			
Different Minor Employed			Normal Ages	6 9	10	11	12	13	14	15	16	17	18		
				Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th	
Year	Boys	Girls	Total												
1922	170	160	330												
			Boys	-	1	1	46	55	30	26	7	1	-	-	167
			Girls	-	-	3	38	47	39	22	7	2	-	-	158
			Total	-	1	4	84	102	69	48	14	3	-	-	325
				191=58.8%					117=36%			17=5.2%			
				Boys: 103; Girls: 88					Boys: 56 Girls: 61			Boys: 8; Girls: 9			
1921	191	178	369												
			Boys	-	2	7	48	69	40	20	3	1	-	-	190
			Girls	-	3	7	49	49	51	19	4	1	-	-	183
			Total	-	5	14	97	118	91	39	7	2	-	-	373
				234=62.7%					130=34.9%			9=2.4%			
				Boys: 126; Girls: 108					Boys: 60 Girls: 70			Boys: 4; Girls: 5			
1920	269	210	479	Not Available											
1919	193	160	353	Not Available											

A.			B. Grades Left by 5,073 Minors											
Number (5,013) of			Retarded					Normal			Accelerated			
Different Minor	Normal		6	9	10	11	12	13	14	15	16	17	18	
Employed	Ages		9	10	11	12	13	14	15	16	17	18		
Year	Boys	Girls	Total	Below 4th	4th	5th	6th	7th	8th	9th	10th	11th	12th	Above 12th
TOTALS (13 YEARS)														
Total	2610	2493	5103											
	Boys			6	9	38	910	758	535	240	80	9	2	-	2587
	Girls			-	10	40	794	748	564	251	71	8	-	-	2486
	Total			6	19	78	1704	1506	1099	491	151	17	2	-	5073
				3313=65.3%					1590=31.3%			170=3.4%			
				Boys: 1721=33.9%					Boys: 775= 15.2%			Boys: 91=1.8%			
				Girls: 1592=31.4%					Girls: 815 =16.1%			Girls: 79=1.6%			

(Not including years 1919 and 1920)

IN THE REGULAR SCHOOLS (STUDY MADE IN 1926)

Pittsfield	13.6%	74%	12.4%
State	10.3%	62%	27.7%

Dietetics, Home Management and led to a high school diploma.

In Table I there is shown a tabulation of the grades left by all minors 14-16 years of age who were certificated in Pittsfield during the years from 1921 to 1933. A study of this table brings out several significant facts pertinent to our study.

(a) There has been a constant decrease in the number of minors employed from the high point in 1929 to the present. Since under the law minors under 16 years of age must either be at school or at work obviously there is an ever increasing number of minors now in school on a full time basis who under more favorable working conditions would be employed.

(b) A further study of this table shows that of that total number certificated during this period (1921-1933) 65.3% were retarded academically. A study of pupils of the same ages in the regular schools shows only 13.6% so retarded. This means that of this group forced back to school by employment conditions five times as many were unable to profit by the academic program in comparison with those already in the regular schools.

The obvious conclusion is that we must develop our vocational program to care for this new group of full-time students.

Table II presents another phase of the situation which compels our attention. It is a tabulation of the high school enrollments for each year from 1920 to 1937. There has been a constant increase in the secondary school enrollment to such an extent that the number now registered in senior high school is more than double what it was in 1920.

PITTSFIELD HIGH SCHOOL

Table II

Enrollment-years

1920-1937

1920	June	953	
1921	June	897	
1922	June	897	
1923	June	1009	
1924	June	612	(com'l building a separate unit)
1925	June	888	
1926	June	894	
1927	June	935	
1928	June	953	
1929	June	1036	
1930	June	1053	
1931	June	1251	
1932	June	1464	
1933	June	1619	
1934	June	1665	
1935	June	1665	
1936	June	1679	
1937	Present time	2100	

Furthermore, records on file in the office of the high school show that not less than 20% nor more than 25% of the graduates in any one year go on to higher institutions of learning. Since not over 50% of the entire enrollment is registered in commercial, household arts and college preparatory courses, this means that about 50% of those who complete the high school course are not receiving specific occupational training for their life's work. Nor does this take into consideration the fact that many boys take up commercial courses although not fitted for them, but rather because they offer a definite objective and concrete occupational training.

A change in the apprentice training policy of the General Electric Company has recently eliminated the only previously existing opportunity for specific trade training in Pittsfield. The company's apprentice course is open now only to high school graduates with training for supervisory and technical positions as its major objective. Again, these facts point to a definite need for vocational training.

An employment census taken late in 1936 shows that of 14,212 employed in the city of Pittsfield 9012 were engaged in some form of manufacturing industry. This would indicate that it is an industrial city. The General Electric Company is the dominant employer of labor in Pittsfield. It is the one industry which absorbs more of the working population than any other, in fact it employs more than all other industries taken together. In December 1936 of 9,012 industrial employees in the city the General Electric Company employed 5,940.

The standard basis for justifying any kind of educational activity is that it meets a community need. This is particularly true of a program of vocational education. Any study, therefore, which has as its objective the setting up of a vocational training program in Pittsfield must take as its basis the opportunities for employment to be found in the General Electric Company.

Vocational education in Massachusetts is a state-aided type of education and is authorized by Chapter 74 of the General Laws. The schools therein provided for are not public schools, but are schools "under a distinctive management," intended to furnish education distinctive in aim and character from general education provided for in the public schools. Section II Chapter 74, defines vocational education as "education of which the primary purpose is to fit pupils for profitable employment" and enumerate certain forms of vocational education which may be given state aid. Under these definitions the State Department of Education has formulated standards and consequently an attempt to set up a program of vocational education must keep these standards in mind.

Therefore, the problem narrows itself down to a study of the possibilities of cooperation between the General Electric Company and a state-aided program of vocational education in the Pittsfield Public Schools with an effort to reconcile the profits motive of corporation with the fundamental responsibility of a public school system toward the welfare of its children.

Scope of the problem.

Inasmuch as the organization of the program of vocational education here contemplated would be under the jurisdiction of the Pittsfield Public School Committee, we shall deal only with that part of the program which effects vocational education of less than college grade.

Furthermore, the investigation of the need for expanded vocational facilities in the Pittsfield School system will be based upon the following points.

1. The need on the basis of expected occupational opportunity for boys only in the Pittsfield Works of the General Electric Company. Since there is already well established Household Arts and Commercial Training courses in the High School program which meet the vocational needs of nearly all girls who do not go the higher institutions of learning, it was deemed advisable to limit this study to the needs of boys.

2. The need on the basis of courses for which the approval of the State Department of Education can be secured as meeting the standards formulated under Chapter 74 of the General Laws.

3. The need on the basis of lack of agencies now giving specific vocational education.

Sources of Material.

Information concerning the occupational opportunities in the Pittsfield works of the General Electric Company was secured directly by a survey of all the payroll jobs in the plant. Permission of the management was given to do this, as well as to secure detailed information concerning jobs for purposes of analysis of material collected.

The administrative regulations of the State Department of Education relating to the establishment of state-aided vocational schools were studied to ascertain the standards necessary to secure approval of any program which might be set up.

The local facilities for vocational education were familiar to the author but information concerning the apprenticeship program of the General Electric Company was secured from the Superintendent of apprentices of that company.

Method of Attack.

First of all, the field of literature was reviewed, to ascertain the growth and importance of vocational schools in general. Schools were visited, and the organization and curricula were studied. Interviews were held with administrators in the field of vocational education, and with representatives of the State Department of Education. Informal interviews were held with workers and officials of industry and business enterprises. All of this was done in order to have a background for the survey, and to formulate plans for proceeding.

Following this preliminary work, the operations of the Federal Board for Vocational Education and the Vocational Education Act were studied. The Massachusetts legislation on vocational education was carefully considered in order to find out the steps which must be taken in order to establish a state-aided program of vocational education in a community.

Preparations were then made with the assistance of the officials of the General Electric Company to survey all the

payroll jobs in the Pittsfield plant for the purpose of ascertaining a list of occupations for which it would be practicable to set up a training program.

A set of criteria were established as a basis for evaluating this listing of payroll jobs in order to answer the following questions:

1. Which of these occupations have a theoretical training value? By theoretical value is meant that a study of the occupation indicates that effective training can be given in so far as manipulative and technical content are concerned.

2. Of the occupations having a theoretical training value, for how many is training practical when we consider such factors as community attitude, number employed, and special equipment necessary for the training considered in connection with the resources of the community?

3. For how many of the occupations possessing a practical training value has adequate provision been made elsewhere?

As a result of this eliminating process there appeared a small group of significant occupations which will serve as the basis for the training program.

Conferences with plant officials, school officials and others were held to determine:

1. Adminstrative setup for such training covering also entrance requirements.

2. The proper training agencies to be served; curricular content and type and amount of training necessary.

3. Training procedure (method) to be used.

4. Cost of program.

To summarize then the method of attack, was as follows: Investigation of literature in the field, a survey of payroll jobs with analysis of the same, private interviews, visitation and observation.

CHAPTER II

Collection of Data

In proceeding with the actual collection of data the payroll survey previously mentioned resulted in the listings shown under Table III. This is a detailed listing of every payroll occupation, separating jobs minutely and showing the fluctuation over a six month's period. This gives an opportunity to note in which jobs employment is on the increase, thus indicating the trend of future employment opportunities.

Since such a listing divided the various jobs into very many small classifications it was necessary to group together those jobs which have a similar fundamental training content and which would therefore serve as a theoretical basis of a training program.

This was done in two ways:

1. By conferences with company officials who were familiar with the training content and skills involved.

2. On those jobs whose classification would not be accurately placed by conference, more detailed information as to their training content was secured by the use of Survey Blank One.

TABLE III

PITTSFIELD WORKS

General Electric

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Foremen	15	13
Leading Hands	8	8
Instructors	2	1
Inspectors	32	30
Draftsmen	1	-
Dispatchers	2	-
Clerks	25	27
Wage Rate Men	5	2
Supply Order Men	3	4
Stockroom Men	39	39
Stockroom Men (Learners)	2	-
Stockkeeper's Helpers	8	6
Tool Crib Attendants	14	13
Watchmen	29	28
Watch. & Boiler Tending	5	6
Counter Tenders (Rest.)	1	1
Kitchen Help	1	1
Cranemen	30	29
Crane Hitchers	4	13
Truckers-Elec. & Gas (outside)	13	10
Truckers-Elec. & Gas (learner)	1	-
Truckers-Elec. & Gas (Inside)	33	23

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Tractor Drivers	2	2
Garage Employees	4	4
Railroad Employees	4	2
Engineers	6	7
Water Tenders	4	4
Firemen	5	5
Boiler Masons	2	1
Conveyor Operator	1	1
Instrument Tester	1	1
Ashmen	2	2
Cleaner & Wiper	1	1
Switchboard Tenders	2	1
Wiremen & Electricians (1st class)	34	30
Wiremen & Electricians (2nd class)	13	11
Switchboard Oper.-Test	5	5
Gas Plant Tenders	4	3
Masons-1st Class	4	4
Millrights, Steel Workers, Riggers, Crane Repairmen (1st Class)	27	38
Steamfitters & Plumbers (1st Class)	21	19
Millrights, Steel Workers, Riggers, Crane Repairmen (2nd Class)	12	15
Masons (2nd Class)	6	4
Steamfitters & Plumbers (2nd Class)	3	-

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Auto Repair	1	1
Machine Repairmen (maint.) (1st Class)	35	46
Machine Repairmen (maint.) (2nd Class)	19	8
Riggers	1	1
Roofers	2	2
Structural Iron Workers	5	10
Tinsmiths (1st Class)	5	5
Tinsmiths (2nd Class)	2	-
Laborers	93	116
Laborers (Learners)	4	-
Sweepers & Cleaners	29	27
Sweepers & Cleaners (Learners)	1	-
Elevator Oper. (Women)	2	2
Oilers & Belt Lacers	1	1
Oilers & Belt Lacers (Learners)	1	-
Janitors	13	11
Freight Handlers	1	2
Departmental Move Men	3	7
Scrap Handlers	17	13
Collect & Bale Scrap	1	1
Boring Mills-Vert. 5" to 8"	1	1
Cleaning (Potash Tanks)	3	3
Safety Committee & Welfare Workers	11	14
Personnel Workers	1	-

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Apprentices	16	20
Apprentice (Learners)	16	-
Testmen	89	67
Testmen (Learner)	1	-
Testing	1	1
Testing Tanks	3	5
Testing	3	1
Oil Tester (Tank)	6	5
Testing Preliminary Minal Leaks	6	5
Testing Preliminary Minal Leaks	1	-
Testing Boilers	9	11
Mason's Helpers-Pour Concrete-Reactors	3	3
Millwright's Helpers	30	16
Wiremen & Elec. Helpers	7	5
Boring Mills-Vert. & Horiz.-up to 96"	4	2
Drills-Traveling	3	1
Lathe-Engine & Turret	11	3
Special & Comp. Lathe	7	4
Lathe-Engine	1	2
Machine Cores-Lathe	4	2
Auto. Screw Machines	25	16
Auto. Screw Machines (Learners)	2	-
Screw Machine (J&L)	1	1
Hand Screw Machine	47	27

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Hand Screw Machine	4	3
Hand Screw Machine Under 2"	3	4
Milling Machine	6	5
Milling Machine (Learner)	1	-
Milling Mach.-#2 & #3- Plain-Univ. & Vert.	3	4
Milling Machine	5	5
Grind Rings	1	1
Milling (Gear & Worn)	1	1
Drill & Layout - Radial & Sensitive	8	6
Drills-Power	17	12
Drills-Radial & Multi.	1	-
Layout & Drill-Sensitive	14	6
Drills-Sensitive	7	6
Drills-Sensitive (Learner)	1	-
Drill & Tap (Jig)	1	2
Saw Friction	3	5
Saw & Shear Angles & Channels	3	3
Rough Grinding	1	1
Burring (La & Co Parts)	1	-
Burring (La & Co Parts) (Learner)	1	-
Clean & Grind Herk. Cyl.	4	3
Grinding-Shaft-Finish	1	-
Bliss Presses - #128 & Larger	6	11

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Bliss Presses - #21 & C5 Presses	11	13
Notching Presses	16	12
KDD & Univ. Presses	2	2
Swaging	4	2
High Speed Punch Press	1	1
Notching Stock	2	1
Punch Press - #21 Bliss (Clamps)	2	4
Roll & Pack	9	7
Shearing - #120" Blades	10	8
Shearing-less than 120" Blades	18	13
Punch Presses-Weld & Blank	7	7
Punch Presses - Slow Acting	9	11
Shear Helpers	5	5
Punch Press - Pressboard	1	1
Draw Presses - Over 500 Ton	2	2
Draw Presses - Up to 500 Ton	2	4
Saw & Burr Steel	1	2
Sort Sheet Steel Rem.	1	1
Thread Tanks & Covers (CO)	1	1
Thread Cores & Sleeves	1	1
Stamp Nameplates	1	1
Tube Bending & Sawing	2	4
Japanning Punchings	11	6

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Unload Steel	12	11
Stack Punchings Back of Machine	15	12
Break & Unload Punchings	6	5
Weld & Wind (Ribbon Wound)	2	2
Shear & Punch	2	2
Assemb. SL Inst. & Pot. Transf.	6	4
Assemb. 3 Phase Transf.	18	11
Assemb. End Sheets - Single Phase	5	3
Assemb. Transf. on Conveyor - Small	12	7
Assemb. Ratio Adjusters	1	1
Assemb. Pressure Reservoirs	4	3
Repair & Return (Bush.)	1	2
Assemb. Terminal Boards	1	2
Assemb. Ground Switches	5	3
Assemb. Filter Presses	1	1
Assemb. Small LA Parts	2	2
Assemb. Capacitor Frames	15	13
Assemb. Suspension Hooks	2	3
Assemb. Arres. & Condensers	8	10
Assemb. All Types of Pellet Arresters	37	24
Assemb. All Types of Pellet Arresters (Learners)	3	-
Assemb. D. & W. Cutouts	2	4
Assemb. Rest & Pack Primary Cutouts	5	6

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Assemb. Capacitors	2	2
Assemb. Capacitors (Covers)	2	2
Assemb. Capacitors (Covers) Learner	1	-
Repair Capacitors	1	2
Assemb. Capacitors (Oil)	4	7
Assemb. Aux. Parts (Reg.)	10	5
Assemb. (Lab.)	3	-
Assemb. Heating Devices	14	13
Assemb. Dist. Transf.	20	16
Assemb. Power Transf. Over 7500KVA	10	13
Assemb. Power Transf. 500 to 7500 KVA	34	21
Assemb. & Finish Transf.	3	3
Assemb. Concrete Reactors	3	5
Assemb. H. V. Bushings	10	9
Assemb. Ground. Switches, Patio Adj., Filter Press, Panels, Mechanisms, etc.	5	6
Repair Return Apparatus	9	10
Disassemb. & Assemb. Reclaimed Transf. Tanks	2	-
Assemb. Covers, Tanks & Trucks	1	2
Assemb. Regulators	4	4
Assemb. & Prepare for shipment (Boilers)	7	8
Build & Stack Small Core	7	7
Build & Stack Large Core	5	3
Build Cores-Dist. Trans.	1	1

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
End Sheet-Dist. Trans.	4	6
Assemb. Mechanism	1	1
Machinists	11	8
Machinists	8	10
Mach. Oper. - Drilling, Milling, etc.	11	9
Mach. Oper. - Drilling, Milling, etc.	2	2
Machine & Special Tool Work	3	5
Die & Mold Makers	21	22
Tool & Fixture Makers	37	39
Tool Room Machinists	23	21
Die Setters	12	12
Machine Setters	1	1
Chipping & Filing	2	3
Painters (Maint.)	4	3
Painting (Brush)	5	4
Painting (Finish Spray)	8	6
Painting-Spray (Primary)	3	3
Prepare & Finish Spray Paint	4	2
Painting (Rough Spray)	1	-
Painting - Dip	1	1
Compounding Bushings	1	2
Impregnate Thyrite Disc	2	-
Grind, Polish & Buff	1	5

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Acid Dip	2	3
Plating & Dipping	9	7
Tumbling	1	-
Galvanizing	4	2
Wash, Inspect & Repair Blow Holes	4	3
Wash After Treatment	1	1
Wash Before Treatment	1	1
Dip Cylinders in Paraff.	1	1
Galvanizing (Leader)	1	1
Solder Fuse Links	1	-
Tinsmiths	10	7
Soldering	2	2
Soldering (Learner)	1	-
Electric Brazing	8	9
Electric Brazing	3	2
Solder Treating Holes	2	1
Solder Treating Holes (Learner)	1	-
Blacksmiths	2	-
Blacksmiths	1	1
Bull dozer Operators	4	7
Bulldozers	2	2
Welding	4	4
Gas Welding	2	1

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Welders-Oil Tight-Trans.	55	39
Spot Weld (Boys)	2	5
Burning-Gas & Oxygen	7	6
Weld Strip Stock	3	3
Welders-Machine & Hand	6	5
Braze & Spot Weld	2	33
Welders-Electric & Gas	7	20
Welders-Resistance Mach.	6	6
Welders-Hand-Spot	3	2
Welding & Brazing	2	2
Welders-Hand (Boilers)	28	34
Welders-Machines-Self Consuming Electrode	1	1
Welders-Hand-Self Consuming Electrode	4	1
Sheet Metal Workers	4	2
Spinning-Hand-Metal	1	1
Copper Fabricators	17	7
Fabricate Transf. Tanks	12	9
Brake Operators (Drop)	2	2
Fabricate Transf. Tanks (Learner)	1	-
Layout Tank Plates	3	2
Plate Punch Operators	1	1
Straight Tank Plates	1	1
Roll & Form Tanks (Helpers)	2	1

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Roll & Form Tanks (Operators)	3	1
Fabricators' Helpers	19	8
Punch & Brake Helpers	2	3
Brake Operators (Folding)	2	2
Roll Operators Over 1/8" Mat.	2	3
Layout Misc. Tank Plates	7	9
Roll Operators 1/8" or less	2	1
Sand Blast	9	5
Shot Blast (Boilers)	2	2
Wood Workers	6	6
Wood Workers - Dist. Trans.	1	-
Carpenters (Maint.) 1st cl.	19	12
Carpenters (Maint.) 2nd cl.	9	4
Pattern Makers-Wood	8	7
Pattern Makers-Metal	3	4
Making Boxes & Crates	3	3
Nailing-Machine	6	2
Sawyers	4	5
Lumber Handling	20	15
Saw Filers	2	2
Packing Apparatus	39	43
Packing Capacitors	3	1

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Truckers & Shippers	3	1
Checkers-Apparatus	11	10
Marking Apparatus	5	4
Trucking-Hand & Electric	33	32
Checker & Shipper (Leader)	2	1
Checkers & Shippers	9	13
Molding - Floor	10	3
Molding Bench	7	1
Molding - Machine	13	7
Coremaking - Plain	4	3
Molding Mach. (Boilers)	5	8
Cupola Tenders (Iron)	4	3
Melters (Brass)	3	3
Band Saw Operators	2	4
Drill & Grind	5	3
Chipping & Grinding	4	3
Sand Blasting	2	1
Rumbling	1	3
Make Red Lead Compound	13	8
Make Red Lead Compound (Learner)	1	-
Furnace Operators	12	8
Manufacture Magnesia Oxide	9	4

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Furnace Operators	2	2
Oven Tenders	6	8
Furnace Helpers	3	3
Furnace Operators	17	2
Furnace Operators (Learners)	2	-
Annealing Furnace	1	1
Insert-Reg. Sec. Coils	2	2
Wind-Dist.-Single Drive	13	17
Wind-Dist.-Transf.	23	25
Wind-Disc, Shell, Barrel	15	17
Wind-Power Transf.	6	5
Wind-Concrete Reactors	3	6
Wind-Pri. & Sec. Reg. Coils	7	4
Clamp Transf. Coils	4	5
Stacking Transf. Coils - Small	3	1
Stacking Transf. Coils - Large	3	5
Wind Transf. Coils (Boys)	1	-
Wind Transf. Coils (Boys) (Learner)	1	-
Taping - Reg. Coils	1	1
Taping Shields	3	4
Finishing Concrete Reactors	3	5
Molding Regulators Coils	1	1

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Making Misc. Leads-Transf.	2	4
Treating & Vacuum Tank Operators	45	46
Treating & Vacuum Tank Operators (Learners)	5	-
Treating Capacitors	1	4
Cleaning Elec. Condensers	2	-
Treating Reactors	4	5
Layout Insulation	5	-
Layout Cyl. & Saw	1	3
Wind Cyl. over 6 1/2" Dia.	7	10
Wind Cyl. up to 6 1/2" Dia.	20	10
Saw Cylinders	1	1
Wind Cyl. up to 6 1/2" Dia. (Learner)	1	-
Winder's Helpers	2	3
Take Misc. Insulation	2	-
Pressing & Forming Ins.	3	9
Assemb. Spacers, Barriers & Collars	6	3
Make Insulation - Mach.	7	7
Build Spacing Strips & End Rings	2	2
Hold Pressboard Ins.	2	3
Make Cork Caskets	2	3
Shear Pressboard	4	5
Layout & Saw Pressboard	7	3
Pressing Herkolite Plates & Collars	5	14

PITTSFIELD WORKS

General Electric (Continued)

Occupation	Number Employees (Men) Jan. 1, 1936	June 30, 1935
Mixing Room Operators	1	1
Coating Machine Oper.	2	2
Handling Mandrels - Cyl.	19	14
Maching Herk. - Cyl.	4	2
Core & Tube Wind. (Boys) (Learners)	3	-
Carbon Workers	3	3
Pressing Thyrite Disc.	17	-
Scooping - Hand	2	1
Scooping - Machine	3	4
Mix Thyrite	3	-
Chemists	4	3
Material Testers	11	8
Asserblers	15	17
Draftsmen	1	1
Wire Drawing	2	3
Wire Enameling	3	3
Cotton & Paper Cover	15	10
Wire Rolling	7	8
Die Reaming	2	2
Slitting Paper	1	1
Winding Capacitor Rolls	2	-
Reeling Wire	22	14
Reeling Wire	7	4
TOTAL--MEN--PITTSFIELD WORKS	2656	2375

By means of these two steps there was evolved a listing of jobs with the same fundamental training content which would theoretically serve as a basis for the training program. This list is given in Table IV.

The next step was to set up criteria to determine the absorption rate and turnover in these jobs in the Pittsfield Plant with a view toward the eventual placement of graduates of the proposed training program.

Through conference with officials and a study of industrial statistics it was found that the rate of turnover in the jobs listed in Table IV is never below 5% annually. Due to the increase of employment because of the lack of a plant training program during the depression it was found that the present absorption rate in these occupations was not less than 10% annually.

In establishing a training program based on Table IV another important consideration must be the administrative regulations set down by the State Department of Education. These may be summarized as follows:

1. All independent industrial schools shall be organized by departments. A department is an organization of courses, pupils and teachers, designed to give instruction in a trade, craft, manufacturing pursuit or general education.

2. Section 6 of Chapter 74 provides that boards of trustees (school committees) shall appoint advisory committees composed of members representing local trades, industries and occupations.

Survey Blank I

JOB JOB ANALYSIS FOR TRAINING CONTENT
General Vocational Department

Date Investigator

I. Business Department Location

No. Employed No. Available

Hired by Classification

II. Nature and Conditions of Work

III. Machines Used

IV. Time to Learn Labor Supply Trained By

V. Advantages and Disadvantages

VI. Promotional Probability 1

2 3 4

VII. Personal Qualifications Sex Age Data

Educational Experience

Temperamental Physical

Race or Nationality Preferred

VIII. Legal

IX. Duties

(a) Have to do	(b) Have to know
1	1
2	2
3	3
4	4
5	5

X. Training Content

1	1
2	2

SUGGESTED TERMS AND EXPLANATIONS FOR USE WITH JOB SPECIFICATION

(Describe Major Characteristics rather than very fine distinctions)

I. Numbers employed and available: If making plant survey give figures related to plant. If surveying community, give figures for locality.

Hired by: Employer - Employment Manager - Personnel Department (If application forms are in use, secure samples).

II. Nature: Permanent - Temporary - Part time - Seasonal
Heavy - Light - Coarse - Fine - Hot - Cold
Dusty - Wet - Odors - Sticky - Standing - Sitting
Noisy - Quiet - Rapid - Slow - Routine - Varied
Conditions: Walking - Stooping - Lifting
Pulling - Pushing - Light - Air - Cement Floor
Wood Floor - Wet Floor

IV. Time to Learn: days - months - years
Labor Supply: casual - school - agency

Trained by: pick-up-work on the job - apprenticeship - school (type)

V. Pay: Per week or month (be specific). Other Considerations - board - room - goods at discount - other .

VI. Sex: Male (M) or Female (F). Age limits or age preferred

Educational: None - read - write. Add, Subtract whole numbers - fractions.

Experience: Required - Desirable - Unnecessary.

Temperamental: Patient - Careful - Tactful

Physical: Height - Weight - Handiness - Strength - Eyesight - Dexterities (e.g., finger).

Race or Nationality Preferred:

Legal: Special factors covered by law.

VII. (a) Cycle of operations, performance of which constitutes the job.

(b) Parallel items of technical knowledge necessary to job performance.

VIII. Material out of VII selected for content of training course.

TABLE IV

GENERAL ELECTRIC COMPANY

Group No.		Number of Employees
7	Work with Autos, Trucks, Tractors, etc.	57
9	Wiremen & Electricians	47
4	Factory Maintenance	145
1	Machine Maintenance & Machinists	213
6	Testers & Helpers	119
1	Lathe & Screw Machine Milling Operators	121
1	Drill Machine (Lay out Work)	57
1	Press Operator	118
2	Assemblers	396
8	Tinsmith & Related Soldering	57
5	Welders	132
3	Winders	169

3. There shall be a director, who under the executive officer of the board of control, shall be distinctly responsible for the conduct of the school and for all instruction given in the school.

4. There shall be one instructor to not more than twenty pupils, and the number always limited to the size of the group necessary to secure efficient instruction.

5. Approved day schools shall offer at least the same number of weeks of instruction as is provided for the established high school, thirty-five hours per week, five days of seven hours each, and except for approved reasons shall aggregate at least fourteen hundred hours per year, of which at least eleven hundred and twenty hours (80 per cent) shall be for vocational instruction, with at least seven hundred hours (50 per cent) on productive shop work under the direct control of the school.

6. A list of equipment in each school shall be furnished the supervisor of the Department. The equipment shall be sufficient in quantity and variety to enable all departments of the school to give instruction in all the standard methods of the school for which the school proposes to give instruction. In short it should be sufficient in quantity to enable each pupil to keep continuously at work during the shop periods.

7. The Department of Education has a direct duty and responsibility in passing upon the qualifications of instructors.

8. These schools shall be open to applicants who are over fourteen years of age. Admission to the school must be based

upon the applicants' definite conscious aims and desires to pursue the occupations trained for and the applicants' evident ability to profit by the instruction offered; provided that the applicants will be admitted to industrial schools to pursue instruction in one department only.

9. The State Department of Education will reimburse the city to the extent of 50% of the net maintenance cost. This, however, does not include the initial expenditure for such things as plant and equipment.

INTERPRETATION OF THE DATA

It is obvious that the training program is going to be based on the employment opportunities which have come to light in Table IV. These opportunities are briefly summarized in Table V.

Since the criteria set up by the State Department of Education for judging a vocational program is the measure of its effectiveness in training for profitable employment we cannot justify the inclusion of any occupation which does not promise a reasonable opportunity for placement once the skill has been acquired. With this objective in view groups 6, 7, 8, and 9 are eliminated from further consideration in a practical training program.

If placement were our only consideration our problem would be a simple one but other considerations are involved such as lack of sufficient training content and cost of plant and equipment. We shall now apply these criteria to the remaining occupational groups of Table V.

Considering them in the order shown in this table: In Group I consisting of the Machine Trade and allied occupations, we find basic occupational skills requiring a considerable period of training. It might be said that Group I therefore qualifies under the first of our criteria. Now applying the second of our criteria the cost of equipment, we find that this trade requires a great deal of expensive machinery, such as lathes, shapers, milling machines, grinders, drill presses and planers. If this equipment can be provided, Group I should occupy a paramount position in our final training program.

TABLE V

GROUP NO.		EMPLOYEES	ANNUAL EMPLOYMENT
I	Machine Maintenance & Machinist	213	
	Lathe, Screw Machine, Milling Operators	121	25-50
	Drill Machines (Lay Out Work)	57	
	Press Operators	118	
II	Assemblers	396	24-40
III	Winders	168	8-16
IV	Factory Maintenance	145	7-14
V	Welders	132	6-13
VI	Testers & Helpers	119	5-10
VII	Work with Autos, Trucks, Tractors, Etc.	57	3-5
VIII	Tinsmith & Related Soldering	57	3-5
IX	Wiremen & Electricians	47	2-4

Following the established order we next consider Group II, that of the assemblers. Applying the skill criteria we find that modern job analysis and motion study have simplified, standardized and reduced assembling skills to a few specialized operations which can be learned in a short training period of from one to five days. This group is therefore eliminated.

In examining Group III the occupation of winder, we find the need for a highly specialized skill, practically confined to the construction of transformers. There is unquestionably a sufficient amount of skill involved to make training worthwhile. The equipment, however, is expensive highly specialized and patent controlled. Here again as in Group I if this equipment can be provided, this occupation should undoubtedly be included.

Group IV, factory maintenance, is an occupation involving the basic skills found in the building trades. It certainly offers sufficient training content to warrant a place in our program. The equipment is comparatively inexpensive and much of it is already in the possession of the school department. There seems to be no obstacle to the inclusion of this group in our final set up.

Welding, because of its wide application in the local plant of the General Electric Company as well as in industry as a whole demands an extensive training. Group V therefore easily qualified under our skill criteria. There is no obstacle offered by necessary equipment as it is neither expensive nor complicated. This group merits serious consideration.

To recapitulate: The only employment groups which have not been eliminated by our analysis thus far are numbers I, III, IV and V. Let us now turn our attention to these remaining groups.

The difficulty in Group I was one of equipment. When the situation was outlined and discussed with the General Electric Company it was found that due to a retooling program they were ready and willing to provide the basic machinery for a complete machine shop. Other local manufacturers were willing to contribute the remaining necessary equipment. The way is thus clear for the establishment of a complete and thorough course in Machine Shop Practice.

The equipment difficulty in Group III was not so easily solved. In the opinion of the General Electric management patent and production difficulties combined with machine costs made it inadvisable from industry's point of view to provide the necessary equipment, materials and outlets for the finished product. As the resources of the city could not bear the burden alone, winding must be eliminated.

Our analysis thus far offers no serious difficulty in providing a training program for Group IV. In fact, the expansion of our already established general metal and woodworking shops can provide adequate training for this group.

Group V, as we have previously stated offers no skill or equipment difficulty and should therefore take its place among the eligible training possibilities.

To summarize: It therefore is apparent that from the

viewpoint of placement opportunity, training content and practical availability of equipment our program must include (1) a basic machine shop course (2) a basic welding course (3) an enlarged general shop to provide training for factory maintenance.

SUMMARY AND CONCLUSIONS

The purpose of this study is to determine the possibilities of a working arrangement between the Pittsfield School System and the General Electric Company in the establishment of a program of vocational education.

The data on employment opportunities and training content were secured by:

1. A payroll survey
2. An analysis of the skill content of 12 basic occupational groups represented in 371 separate types of jobs.

Other criteria by which the training program was to be judged included:

1. Conformity to State Department of Education standards.
2. Teachability of training content and skills.
3. Cost of plant and equipment.

The analysis of these data appear to verify the following conclusions:

1. The vocational program established in Pittsfield should include:
   (a) a basic machine shop course
   (b) a basic welding course
   (c) an enlarged general shop to provide training in factory maintenance.
2. All of the skills represented in the final program should whenever possible be set up on a long and short term

unit basis. The short term units would give those boys who are forced to leave school early completed training in one or more special skills, while the integration of these short term units into a complete trade course will give the boy who stays to the end a thorough grounding in the fundamentals of that occupation. The relationship between short and long term units is perhaps best shown graphically in Chart I.

3. Industry, at least as represented by General Electric Company, is more than willing to cooperate in the establishment of vocational education and to bear its share of the cost.

RECOMMENDATIONS

It will be absolutely necessary to see to it that state standards are maintained with reference to organization, administration procedures and teacher qualifications.

Since the whole program is to be under the executive control of a popularly elected school committee, it is essential that the general public be educated to the needs.

And finally the program must be developed gradually, never attempting more than can be adequately assimilated, always bearing in mind that the success of the project depends to a large extent on the closest cooperation of industry.

It seems to the author and also to representatives of industry who have been consulted that this cooperation could be strengthened to the mutual advantage of both by the schools' assumption of the teaching of the academic phase of the existing General Electric apprenticeship program. As soon as business warrants, the academic instruction previously given to apprentices will have to be resumed. Considerable planning as to type of instruction, time of scheduling classes and other matters would have to be worked out in careful cooperation with industry. It would seem reasonable to believe that this is one of the areas in which the school should be well equipped to serve the vocational needs of pupils.

This may be the beginning of the establishment of the ideal cooperative training plan in which industry teaches the manipulative skills on the job and the school provides the related technical and cultural knowledge.

OUTCOMES

A. Because some time has elapsed since the inauguration of the basic idea of this thesis, the intervening period has witnessed the fruition of many of the objectives which were set up as goals in the beginning. It would seem therefore, at this time to be necessary to write a brief chronological outline of the resulting accomplishments.

I. DEVELOPMENT OF THE MACHINE COURSE

When the survey had proceeded to a point where definite occupational opportunities in the General Electric Company became evident, a conference was held with the Superintendent of Schools in order to point out the progress that was being made. About this time also, the writer called to the attention of certain General Electric Company officials, the implications of the survey. As a result of all of these talks, there was finally submitted to the General Manager of the General Electric Company, a letter over the signature of the Superintendent of Schools, in which was laid down several important points brought out in the survey.

The reaction of industry was almost immediately one of the utmost cooperation. A Works Committee was appointed to study the problem and many conferences were held between this committee, the Superintendent of Schools, and the writer. It finally culminated in a blanket order from the manager, instructing all executives at the local plant to cooperate with the School Department in the development of a local program of Vocational Education, and specifically to select certain

equipment within the plant which might be donated to the school for the establishment of a machine shop.

At this point an Advisory Committee was selected. This committee consisted of three executives from the General Electric Company, one from the E. D. Jones Company, a local manufacturer of high-grade paper-making machinery, and the president and manager of a small shop which specialized in the rebuilding of automatic screw machines. These men immediately made it their responsibility to thoroughly canvas other industries throughout the city in order to secure the necessary equipment. The response was again very enthusiastic, so that within a very short time we were provided with the following equipment:

1 cylindrical grinder	1 planer
6 machine lathes	1 tool and cutter grinder
2 milling machines	1 power hacksaw
2 shapers	4 drill presses
1 surface grinder	

All of this equipment, with the exception of one lathe, the surface grinder, and one drill press which were purchased by the city, was donated by industry. These Advisory Committee members then used their business connections to contact such nationally-known firms as the Greenfield Tap and Die Company, the National Drill Company, and many others for the purpose of soliciting small tools and equipment. The result in brief is that we have a tool room, equipped with approximately fifteen hundred dollars worth of small tools.

The State Department of Education whose officials had been kept informed concerning the progress of this undertaking, now came forward with the proposal that for the first two years of its existence, the state would pay from Federal Funds, the entire salary of two additional teachers necessary to operate the course. During the third year, the reimbursement would be apportioned; three quarters of the salary by the state and one quarter by the city, and during the fourth year the reimbursement would go on a fifty-fifty basis between the state and the city.

In the selection of teachers we were most fortunate in that there was finally chosen two men of considerable practical experience.

The related subjects instructor, a graduate and former teacher in the General Electric Apprentice School has had many years experience in tool making, tool design and apprentice instruction. The shop instructor has had over twenty years experience in the metal-working trades, during the latter part of which he served as general foreman.

The large number of applicants made the selection of pupils a difficult problem. Selection was finally based upon results of the Otis Advanced Intelligence Test Form A and a mechanical aptitude test which had been developed by the General Electric Company Apprentice School. As there were many promising candidates who could not be admitted, a waiting list has been established.

The standards of the State Department of Education with

reference to vocational training which requires that students be trained on practical jobs presented an obstacle which was partially overcome by the cooperation of industry in allowing us to construct machines on which exclusive patent rights were held. For every two machines constructed one was given to industry and one retained by the school as payment for its labor. In addition, other practical work was secured from local small shops, individuals and the municipal departments.

It was the consensus of opinion that both from the standpoint of the cultural and social as well as the economic, this unit trade course should be an integral part of the high school program, leading to a recognized high school diploma. This was accomplished by scheduling the academic subjects such as English, History, and Economics in the regular high school program.

II. EXPANSION OF GENERAL DEPARTMENT TO CARE FOR FACTORY MAINTENANCE COURSE

The general department as organized already provided courses in woodworking, painting, and decorating. Supplemental units of sheet metal work and of public building maintenance have been added to give more diversified training opportunities in factory maintenance. A stockroom has been established to give instruction in the ordering, care and distribution of supplies and equipment.

III. DEVELOPMENT OF PRESS-FEEDING INTO A PRINTING COURSE

Attracted by the possibilities of cooperation as evidenced by the establishment of the machine shop course, identical pro-

cedures were adopted with considerable success in connection with the printing industry. Additional presses and equipment were donated by several firms. A full time instructor thus became necessary and a comprehensive printing course was the result. There is no problem of securing practical work in this department since there is always considerable school printing to be done.

IV. PUBLIC RELATIONS AND PLACEMENT

No educational program can be entirely successful unless it secures the enthusiastic backing of the general public. To secure this three principal procedures were effective:

(1) A series of luncheons, prepared by the Household Arts Department, were served to business and industrial executives after which an informal tour of the school was conducted.

(2) Contacts made at these luncheons led to periodic visits to local industries by the instructors.

(3) An Open House, which has become an annual affair was inaugurated to give the general public an opportunity to see the school in action during a special session held in the evening.

Interest was thus created which aided materially in the establishment of a successful Placement Bureau. Being thoroughly conversant with what the school has to offer, industry and the public at large were ready to seek the aid of the school placement bureau for the purpose of securing new employees.

V. DEVELOPMENT OF THE APPRENTICE PROGRAM

The ideal example of cooperation between school and industry is best represented by an apprenticeship program in which the school teaches the related subjects and industry provides training in the manual skills. Since the General Electric Company already possessed a going apprenticeship program, the attainment of this ideal involved the assumption of the teaching of the related program by the school. An opportunity to make a beginning along this line was offered by the need for the establishment of an apprentice course in the rapidly expanding Plastics Division. The school department undertook to provide the necessary training in Shop Mathematics, Drafting, Plastics, Chemistry and Tool Design. A year's success in this experiment has led to the assumption by the school of the entire related work program of the apprentice course for the Pittsfield plant beginning in September 1938.

VI. EVENING TRADE EXTENSION COURSES

An effective vocational program should offer an opportunity for men already employed in industry to improve and advance themselves on the job. To this end evening trade extension courses were offered utilizing the equipment of the day vocational school. Some three hundred have taken advantage of this opportunity and in many cases it has paid them dividends in increased wages and promotion.

VII. POSSIBILITIES OF FUTURE EXPANSION

As the program develops the possibilities for future ex-

pansion seem almost infinite. As yet, nothing has been done to train welders, an occupational opportunity which was uncovered by the survey. Other opportunities in the community at large remain to be explored and provided for; auto mechanics, to mention only one. We may look even further and say that this school, because of its geographical location, may in the future be called upon to serve as the vocational training center for the entire county.

We must however, constantly bear in mind the dangers attendant upon too rapid expansion, ever and always applying the test of community need and placement opportunity.

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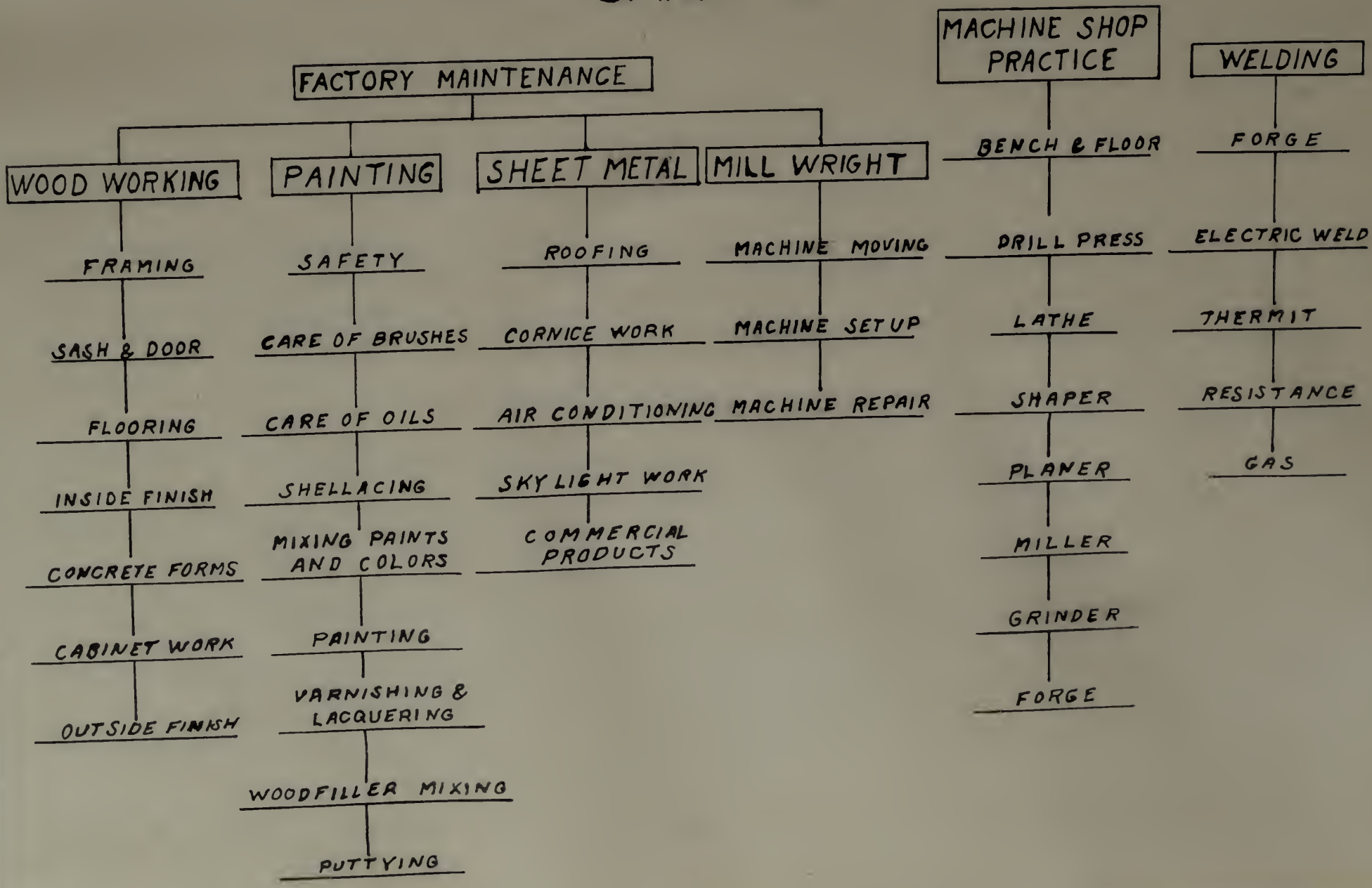
CHART 1


FACTORY MAINTENANCE
WOOD WORKING
FRAMING
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FLOORING
INSIDE FINISH
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CABINET WORK
OUTSIDE FINISH
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SAFETY
CARE OF BRUSHES
CARE OF OILS
SHELLACING
MIXING PAINTS AND COLORS
PAINTING
VARNISHING & LACQUERING
WOODFILLER MIXING
PUTTYING
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June 8 - '38

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