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THE FRANCIS SCOTT KEY SCHOOL

LOCUST POINT, BALTIMORE, MARYLAND

By

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION.

Washington, September 15, 1920.

Sir: Some time ago the Commissioner of Education was requested by the principal of the Francis Scott Key School—the public school in that portion of the city of Baltimore known as Locust Point—by the board of education, and the mayor to advise in regard to the reorganization of the school to meet more effectively the needs of the children and the adult population of that section, and to suggest plans for a building to be so constructed as to adapt it to the use of the school so reorganized. In order to secure the data necessary as a basis for recommendations for the reorganization and for plans of building, and to make an intelligent presentation of the matter to the school board, Mr. Charles A. Bennett, of the Bradley Polytechnic Institute, of Peoria, Ill., was asked to make a careful study of the condition and needs of the people of that section of the city. The manuscript transmitted herewith contains a report of Mr. Bennett's study, together with recommendations for the reorganization of the school and the units which should be included in the new school building. Since this report will be helpful to the board of education in the city of Baltimore, not only in regard to that particular section of the city, but also in regard to other similar sections, and will also be helpful to boards of education in other cities, I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted,

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE FRANCIS SCOTT KEY SCHOOL,

LOCUST POINT, BALTIMORE, MARYLAND.

REPORT OF A STUDY OF THE SCHOOL AND LOCAL INDUSTRIES
WITH REFERENCE TO THE ENRICHMENT OF THE SCHOOL CUR-
RICULUM AND THE PLANNING OF A NEW SCHOOL BUILDING.

THE SPIRIT AND PURPOSE OF THE STUDY.¹

This study of the Francis Scott Key School is an effort to break through the wall of school tradition and get a view of community educational needs unhampered. It does not ignore school experience or discount its value in solving new problems. On the contrary, it seeks to utilize such experience when it serves a purpose, but not to be blinded by it. The study endeavors to take school and community conditions as they exist at the present, estimate in what respects they may be expected to be different in the near future, and then work out a school organization plan and suggest a curriculum that will meet these conditions.

Part I.—CONDITIONS AT LOCUST POINT AFFECTING THE SCHOOL.

The conditions at Locust Point affecting the school and some inferences drawn from a knowledge of these conditions are as follows:

1. *Only about one-half of 1 per cent of the children of the Locust Point school ever go to a high school.* If this school has offered preparation for high school that is as good as a standard public elementary school, and there seems to be reason to believe that it has, then the fact that no pupils take advantage of this opportunity is of

¹The study was facilitated in every way possible by Miss Perais K. Miller, principal of the school. Her great desire for a school that will render a larger service to the children of the community, her open-minded attitude toward change, and her modern viewpoint have eliminated all of the ordinary school obstructions to such a study. In fact many of the elements in the reorganization of the school, as proposed in this report, were suggested by Miss Miller.

Assistance was rendered also by representatives of the industries. A large proportion of the factories on the Point were visited; also several in south Baltimore. Every person approached in the process of this study, whether officially connected with public education or the industries, or with neither, expressed a cordial interest in what was being done.

prime importance in determining the character of the school in the future. This fact suggests that in so far as the character of the school is affected by the aim to prepare pupils for the high school, this aim may be eliminated without perceptible loss in the efficiency of the school. It is quite possible, however, that, just as in the case of the Elementary Industrial School in Cleveland, Ohio, a student spending his upper grammar grade years in a school planned to meet the needs of life in an industrial community, without reference to the high school, would still be able to compete favorably in high-school work, if the opportunity to do so were to come to him, as it ought to come. There ought to be no royal or exclusive road to the high school.

2. A large number of children, both boys and girls, leave school and go to work immediately on reaching their fourteenth birthday or very soon after. The school law permits a child to receive a general employment certificate in the city of Baltimore as soon as he is 14 years of age, provided he has "completed the fifth grade or a course of study equivalent to five yearly grades in reading, spelling, writing, English language, and geography, and is familiar with the fundamental operations of arithmetic up to and including fractions."

The employment certificate records for the past four years, dating back by years from March 12, 1920, give the following results:

Employment certificate records for four years.

	1919-20	1918-19	1917-18	1916-17
To girls.....	21	17	45	2
To boys.....	40	36	59	58

This is an average for the four years of 28.5 for girls and 47.5 for boys.

The average for the past two years, however, is only 20.5 for girls and 38 for boys.

Approximately 27 per cent of the children in the sixth, seventh, eighth, and ungraded classes left school to go to work each year during the past two years. The Pathfinder Survey of 1914² states that of all the children at Locust Point, including those in the parochial schools, 50 per cent leave school by the end of the fifth grade, nearly 75 per cent leave before the end of the sixth grade, and that only 10 per cent complete the eighth grade.

The inference from these figures and from the statements of the teachers in the school is that children are taken out of school and put to work as soon as the law permits, and that most of these go

² An unpublished report.

to work in factories of some sort. In the interests of the children and of American ideals of education for citizenship something should be done to stop this leakage.

2. *The factories visited reveal the fact that most of the work-certificate children get jobs in which there is very little chance to learn a trade or to work up beyond a mere routine job.* When seen in the factories most of the boys were carrying something from one place to another—bottles from a machine to a furnace, bottles from a furnace to a box, blocks of wood from a saw to a truck, boards from a pile to a man at the saw, or making bundles of bags. Occasionally one was found running a simple machine.

The inference from these facts is that the industries are not the best places for most 14-year-old children. One employer at the Point said, "I am sorry for the boy every time I see a new one come into our factory." Another said, "No; there isn't much of a chance for a boy here"; and yet he expects to be able to use more boys in the near future, and no doubt he will get all he wants.

The Pathfinder Survey classified the industries in which children were found in 1912-13, but no attempt was made to analyze the jobs themselves. It stated, however, that, so far as was known, at that time no local industry provided systematic industrial training for the boys and girls in their employ.

1. *The environment of the children at Locust Point is far from being an ideal one, and is likely to be worse in the future, when the industries occupy the open space they have in reserve.* At the present time the children are surrounded by railroad tracks and high board fences: in a few years these tracks and high fences will crowd them into a much smaller space. At the present time the playground in Latrobe Park is the bright spot on a child's map of Locust Point. This should be supplemented by increased recreational facilities in the public school.

When one reads that at the time of the Pathfinder Survey, in 1914, the system of securing fuel very prevalent among the very poor families at the Point was to require the children to pick coal from the cars or wherever it could be found, and when one reads in the same survey that juvenile delinquency at the Point was about twice its proportion figured on the basis of the city's total population, he immediately concludes that the logical way to improve the general condition is to keep the children healthfully and educationally occupied under inspiring moral supervision for more hours every day, especially the older children. This can best be done by increasing the length of the school day for children above 13 years of age and by providing the right kind of facilities for industrial education and for wholesome recreation.

5. *There is a great lack of facilities for industrial training at Locust Point.* The Pathfinder Survey brought out the fact that at that time 61 per cent of the working force of men at the Point were employed in the industries at the Point, and by looking over the list of occupations of the remaining 39 per cent who are employed elsewhere it is clear that about 60 per cent of these are in what may appropriately be classed as industrial occupations. Thus it will appear that in 1914 approximately 84 per cent of the men workers living on the Point were engaged in the industries of Baltimore. While only 13 per cent of the working girls living on the Point were reported as employed in the industries of the Point, 80 per cent of the remaining 87 per cent, or 70 per cent, were in what may be regarded as industrial occupations. These added to the 13 per cent give 83 per cent of the working girls as engaged in industrial work. By the same process it appears that ~~78~~ per cent of the working boys of the Point were engaged in industrial occupations.

While these figures are not the facts exactly as they are to-day, they must be essentially as true to-day as six years ago. Yet it appears that nothing is being done in the industries and very little in the schools of the Point to provide industrial training. At the present time the seventh and eighth grade boys of the public school are given an opportunity to receive instruction in woodworking for one 2-hour period each week. This is so wholly inadequate in such a community that it need hardly be mentioned. There is really no opportunity for a boy in school to learn the fundamentals of the processes and technic of the typical local industries, and there is no opportunity at the Point for the boys and young men in the industries to supplement their limited schooling by the study of mathematics and applied science and drawing and citizenship. There are no cooperative part-time schools; there are no continuation schools; there are no evening trade classes.

Part II.—PROPOSED CHANGES IN THE SCHOOL.

In order to meet the conditions discussed in Part I of this report, the following changes are proposed in the Francis Scott Key School:

1. Place all children 13 years of age or older, except a few of the "ungraded," and all others who have reached the sixth grade, into a division of the school to be run under a departmental organization and having a curriculum in which industrial training and the right kind of physical training and recreation are given an equal place with other subjects. This might be called an intermediate school.

2. Organize cooperative part-time classes for such students as must leave school and go to work before graduation from the intermediate school.

3. Provide a one-year trade or vocational course following the eighth grade.

With these three established, facilities would also be provided for—

4. More industrial work for slow and subnormal students who are now classified as "ungraded."

5. Evening trade or vocational classes for young men and young women who are working in the industries and are desirous of improving their education.

Some of the considerations leading to these five recommendations and some of the details concerning their operation are given in the following:

DEPARTMENTAL ORGANIZATION.

A study of Tables 1, 2, 3, and 4 shows clearly (*a*) that a large number of both boys and girls leave school at the end of the fifth grade, when the law permits them to leave, provided they are 14 years old; (*b*) that there are a large number of children in the fourth and fifth grades and some in the second and third grades who are 13, 14, and even 15 years of age.

The first of these two observations is verified by Tables 5 and 6, showing the withdrawals to go to work. Table 7 shows that during the past two years the average drop between the fifth and sixth grades was from 106.5 to 57, or 46.5 per cent. From the fifth to the seventh it was 71.8 per cent, and from the fifth to the eighth 79.3 per cent.

If it were possible to make the school so attractive to the children and their parents—if they could be convinced that three years more of schooling is a good investment of time and money, as it has proven to be—the children who now appear in Tables 5 and 6 might be added to the number of students in attendance shown in Table 7. But this would not account for all the leakage, for, by going over the employment certificates it was found that many drop out during the summer vacation.

In Table 8 these summer losses are accounted for. Comparing the average column in this table with the corresponding grades in the average column in Table 7, we see that instead of 57 in the sixth grade there ought to have been 75; instead of 30 in the seventh, there should have been 40; the eighth grade ought to have been increased from 22 to 37, and the ungraded class from 55 to 70. These

average figures in Table 8 will serve as a help in estimating the possible number under the proposed new plan of organization.

In Table 9 are summarized and averaged the number of children, exclusive of the ungraded class, who are 13 years of age or older and below the sixth grade.

Table 10 shows what would be left of the elementary school under the present organization if the proposed new division or intermediate school were adopted.

Table 11 gives the number of classes or sections into which the pupils of the intermediate school would be divided.

The curriculum for this division of the school should cover all the essential parts of the regular work of the sixth, seventh, and eighth grades, with an additional amount of science, of industrial training, and of school-stimulated and supervised recreation. In general the course would include: (1) English; (2) mathematics; (3) history and social science; (4) physical science, including mechanism; (5) drawing, art, and music; (6) shopwork and homemaking; (7) health and recreation.

TABLE 1.—Number and ages of boys in each grade, 1918-19.

Grades.	Ages.											Total	
	5	6	7	8	9	10	11	12	13	14	15		
Kindergarten.....	15	12	1										28
Grade I.....	25	10	15	2	1								53
Grade II.....			6	17	17	15	2						61
Grade III.....				4	18	15	9	10					61
Grade IV.....					6	12	10	1	1				33
Grade V.....						3	13	9	12	10			57
Grade VI.....							5	14	9	5			33
Grade VII.....								3	2	3			13
Grade VIII.....									1	3			4
Ungraded class.....				1	2	3	6	6	6	9	4		47
Total by age.....	10	32	22	24	41	48	53	55	15	31	7		421
Grand total.....													421

TABLE 2.—Number and ages of boys in each grade, 1917-18.

Grades.	Ages.											Total	
	5	6	7	8	9	10	11	12	13	14	15		
Kindergarten.....	11	14	1										26
Grade I.....	1	21	20	7	7	1							56
Grade II.....		5	18	17	15	10	3	1					70
Grade III.....				8	15	18	9	2					70
Grade IV.....					6	11	10	9	6	1			53
Grade V.....						4	10	22	12	6			54
Grade VI.....							8	9	14	1			32
Grade VII.....								4	6	3			13
Grade VIII.....									3	7			10
Ungraded class.....				1	2	6	7	7	10	7	2		43
Total by age.....	15	40	48	33	46	50	50	51	51	26	5		421
Grand total.....													421

TABLE 3.—Number and ages of girls in each grade, 1918-19.

Grades.	Ages.											Total.			
	5	6	7	8	9	10	11	12	13	14	15		16		
Kindergarten	11	5													16
Grade I	13	26	11	3	2										55
Grade II			8	30	13	10	2	2	1						66
Grade III				14	17	17	7	1	3						54
Grade IV				4	17	17	6	11	9				1		52
Grade V					5	17	13	16	16	5					69
Grade VI						6	13	13	4	1			3		28
Grade VII							1	6	1	1			1		9
Grade VIII								5	8	3			1		17
Ungraded class				2	3	1	1	2	4	1					15
Total by age	21	31	19	13	36	50	39	46	47	23	10	2			
Grand total															379

TABLE 4.—Number and ages of girls in each grade, 1917-18.

Grades.	Ages.											Total.			
	5	6	7	8	9	10	11	12	13	14	15				
Kindergarten	5	11													16
Grade I	1	21	30	6	1	1									60
Grade II		1	15	19	13	5	3								56
Grade III				15	22	11	0	2	3						55
Grade IV					7	16	16	13	6						60
Grade V						11	16	13	7	2					49
Grade VI							3	9	6	5					21
Grade VII								5	12	5					22
Grade VIII									2	7					12
Ungraded class				1		2	3	2	4	1					13
Total by age	6	33	45	11	16	16	50	11	40	22	3				
Grand total															376

TABLE 5.—Withdrawals of boys to go to work.

Grades.	1918-19	1917-18
Grade VI	0	6
Grade VIII	2	3
Grade VIII	1	
Ungraded class	9	9
Total	21	18

TABLE 6.—Withdrawals of girls to go to work.

Grades.	1918-19	1917-18
Grade IV	1	1
Grade V	1	3
Grade VI	4	5
Grade VII	4	3
Grade VIII	1	1
Ungraded class		1
Total	11	14

FRANCIS SCOTT KEY SCHOOL.

TABLE 7.—Number of students in each grade.

Grades.	1918-19			1917-18			Average of total.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Kindergarten.....	28	16	44	29	16	45	44.5
Grade I.....	57	55	112	60	60	120	112
Grade II.....	61	51	112	70	56	126	124.5
Grade III.....	51	52	103	52	65	117	116
Grade IV.....	49	60	109	55	60	115	107.5
Grade V.....	33	26	59	32	49	81	108.5
Grade VI.....	15	9	24	14	23	37	57
Grade VII.....	4	17	21	11	12	23	30
Grade VIII.....	40	15	55	43	13	56	55.5
Ungraded class.....							
Total.....	421	370	791	424	376	800	788.5

Shows loss of 46.5 per cent between grades V and VI; of 71.8 per cent between grades V and VII; of 79.3 per cent between grades V and VIII.

TABLE 8.—Approximate number of students who would have been in upper grades if none had left to go to work.

Grades.	1918-19			1917-18			Average of total.
	Boys.	Girls.	Total.	Boys.	Girls.	Total.	
Grade VI.....	47	34	81	41	28	69	75
Grade VII.....	22	15	37	17	26	43	40
Grade VIII.....	13	29	42	14	10	24	37
Ungraded class.....	33	19	52	55	14	69	76.5

Made by adding figures in Tables 5 and 6 and Table 7, and work certificates granted during summer vacation.

TABLE 9.—Number of students, exclusive of the ungraded class, 13 years of age or older who are below Grade VI.

	1918-19	1917-18	Average
Boys.....	34	27	30.5
Girls.....	44	20	32

* Data taken from Tables 1, 2, 3, and 4.

TABLE 10.—Number of rooms needed for classes in day school, not under departmental organization.

[Source of data, Tables I to IV]

Grades.	Number of pupils.	Number of rooms.
Kindergarten.....	44-45	2
Grade I.....	126-128	3
Grade II.....	122-125	3
Grade III.....	106-114	1
Grade IV.....	84-97	1
Grade V.....	59-76	2
Ungraded boys.....	40-43	2
Ungraded girls.....	13-15	1
Open air.....		1
Assembly Hall.....		1

* These figures exclude children 13 or more years old. It should be noticed, also, that they are based on total enrollment for the year, and therefore subject to some slight reduction when estimating room capacity needed at any specified time.

TABLE 11.—Number of sections proposed under departmental organization in day school.

Grades.	Number of pupils.	Source of data.	Number of section.
Over-age boys.....	— to 30	Table 9	2
Over-age girls.....	— to 32	Table 9	2
Grade VI, boys.....	32 to 47	Tables 7 and 8	2
Grade VI, girls.....	23 to 31	Tables 7 and 8	1
Grade VII, boys.....	14 to 22	Tables 7 and 8	1
Grade VII, girls.....	9 to 26	Tables 7 and 8	1
Grade VIII, boys.....	4 to 15	Tables 7 and 8	1
Grade VIII, girls.....	12 to 29	Tables 7 and 8	1
Part-time boys.....		Tables 5 and 6	1
Part-time girls.....		Tables 5 and 6	1
Grade IX (trades).....			1

With the curriculum as above presented and the number of sections shown in Table 11 as a basis, the daily program for boys, Tables 12, 13, and 14, and others for girls, Tables 15, 16, and 17, have been worked out. These constitute a working program under the conditions stated, but each year the conditions would change somewhat. In consequence of this, the details of the program would change. There are certain fundamentals, however, that would not. The chief reasons for presenting the programs worked out in such detail is to prove the practicability of this plan of organization and the curriculum proposed, and especially to indicate the building space required for the proposed new division of the school under departmental organization.

In harmony with the previous statement, the new division of the school should occupy the time of the children more hours a day than the present school day. The proposed program begins at 8.30 and continues to 4.30, with one hour for luncheon.

Such an increase in the amount of time in school is sanctioned by recent writers who are advocating that the public school adjust itself to present social demands. The program provides two long periods—ordinarily called double periods—in the morning and two in the afternoon. Periods of about this length are essential in shop-work and all laboratory subjects, and have proven desirable in academic subjects. This is especially true where pupils do a large part of their studying at school and where teachers are expected to teach pupils how to study as well as listen to recitations and give explanations. In a school of the type under consideration it is especially desirable that the pupils be taught how to study and given time to study in school. It is not satisfactory to depend upon home study. This school study is accomplished by devoting the whole period to one subject—as arithmetic, or history, or English, for example—a part of the time being spent in study and a part in recitation. This plan has proven effective in experience. Where two subjects are assigned to one period in the tables, it should be under-

stood that the subjects are both taught in that period during the week, but not both on the same day.

TABLE 12.--Daily departmental program for classes of boys.

Grades.	8.30-10.15	10.15-12	1-2.45	2.45-4.40
	First period.	Second period.	Third period.	Fourth period.
Over-age A.....	Shopwork.	English.	Geography.	Health and recrea-
Over-age B.....	English.	Arithmetic.	Drawing.	tion.
Grade VI A.....	Health and recrea-	Shopwork.	Drawing.	Health and recrea-
Grade VI B.....	tion.	Geography.	Geography.	tion.
Grade VII.....	Health and recrea-	Drawing.	Shopwork.	English.
Grade VIII.....	tion.	Geography.	English.	Arithmetic.
Part-time.....	Shopwork.	Health and recrea-	Shopwork.	Shopwork.
Grade IX (trade).....	Mathematics.	tion.	English.	Drawing.
	English.	Health and recrea-	Arithmetic.	History.
	Social science.	tion.	Shopwork.	Drawing.
	Drawing.	Mathematics.	Health and recrea-	Physical science.
	Physical science.	English.	tion.	Shopwork.
	Shopwork.	Social science.	Health and recrea-	Mathematics.
		Shopwork.	tion.	Physical science.

TABLE 13.--Daily program for teachers of boys.

Teachers.	First period.	Second period.	Third period.	Fourth period.
Teacher, health and recreation.	VI A and B.....	VII and VIII.....	P. T. and Trade	Oa A and B.
Teacher, shopwork.	Oa A and B.....	Oa B.....	VIII.....	P. T.
Teacher, shopwork.	Trade.....	Trade.....	VIA.....	VI B.
Teacher, shopwork.	VI A.....	VI A and B.....	Oa A and B.....	VII and VIII.
Teacher, drawing.		VIA and B.....	Oa A and B.....	
Teacher, history, geography, and physical science.		VIA and B.....		
Teacher, English, and arithmetic.	Oa B.....	Oa A.....	VII B.....	
Teacher, mathematics, English, and social science.	VIII.....	P. T.	VII.....	VIA.....
Director, industrial work.	P. T. (drawing and physical science).			Trade (mathematics, drawing, and physical science).

* The part-time and trade classes; see Table 12. * The over-age A and B classes; see Table 12.

TABLE 14.--Daily program of rooms for classes of boys.

Rooms.	First period.	Second period.	Third period.	Fourth period.
Gymnasium.....	VI A and B.....	VII and VIII.....	P. T. and Trade.	Oa A and B.
Health classroom ¹				
Shower baths ²				
Shop.....	Oa A.....	Oa B.....		P. T.
Shop.....	Trade.....	Trade.....	VIII.....	
Shop.....	VII.....	VIA.....	Oa A and B.....	VI B.
Drawing.....	P. T. (2 days)	VIA and B.....	Oa A and B.....	VII and VIII.
Laboratory, physical science.	P. T. (3 days)	VIA and B.....	Oa A and B.....	VIII, Trade, and physical science.
Classroom ¹⁰	Oa B.....	Oa A.....	VI B.....	VII, History, Trade, Mathe-
Classroom ¹⁰	VIII.....	P. T.....	VII.....	matics.
				VI A.

¹ The over-age A and B classes; see Table 12.
² To be free for use whenever needed by teachers of health.
³ To be free for use whenever needed.
¹⁰ Both classrooms to be equipped with tables suitable for classes in elementary drawing or blue-print reading.

Another advantage in this long period is that if the same teacher gives the instruction in both subjects assigned to the hour, he can divide the time occasionally, if it seems best to do so. For instance, if he teaches English and arithmetic, he might on a given day devote one-fourth of the period to some small section of one subject and three-fourths to the other subject. Or if a given student needed to study one subject much more than the other the adjustment could be made in the study part of the period. Even when both subjects are not taught by the same teacher adjustments of time can be made between the teachers for special purposes without interfering with the daily schedule of any other group of students. In other words, the plan allows for a large measure of adjustability within a perfectly organized program.

No attempt has been made to work out the details of the program in health and recreation. The space assigned it indicates its relative value. It is intended to include physiology, hygiene, first aid, "safety first," physical education, athletics, and games, both indoors and outdoors. It is believed that the amount of time assigned to it is fully justifiable, when the out-of-school environment of the children at Locust Point is considered.

It should be noticed in Table 13 that the director of industrial work is assigned for two periods only. He will need the remainder of his time for supervision, and especially to visit the factories where part-time students are at work, for he should become the coordinator between the school and the industry. This is very important. He must see that his boys give reasonable service and receive proper treatment. Also he is the logical person to be the vocational adviser of this group.

TABLE 15.—Daily departmental program for classes of girls.

Classes.	8.30-10.15	10.15-12	1-2.45	2.45-4.30
	First period.	Second period.	Third period.	Fourth period.
Over-age C.....	Home making.	English. Arithmetic.	Geography. Art.	Health and recreation.
Over-age D.....	English. Arithmetic.	Home making.	Art. Geography.	Health and recreation.
Grade VI.....	Health and recreation.	Geography. Art.	Home making.	English. Arithmetic.
Grade VII.....	Health and recreation.	Art and history.	English. Arithmetic.	Home making.
Grade VIII.....	Home making.	Health and recreation.	Mathematics. Social science.	Art. Physical science.
Part-time.....	Art. Physical science.	Home making or trade.	Health and recreation.	English. Social science.
Grade IX (trade).....	Trade or home making.	Trade or home making.	Health and recreation.	English. Social science.

TABLE 16.—Daily program for teachers of girls.

Teachers.	First period.	Second period.	Third period.	Fourth period.
Teacher, health and recreation.	VI and VII.....	VIII.....	(P. T. and trade).....	Oa C and D.
Director, home making.	VIII and trade....	P. T. trade.....	.....	VII.
Teacher, home making.	Oa C.....	Oa D.....	VI.....	.....
Teacher, art.....	P. T. (3 ds.).....	VI-VII.....	Oa C and D.....	VIII (2 ds.).....
Teacher, history, geography, and physical science.	P. T. (2 ds.).....	VI-VII.....	Oa C and D.....	VIII (3 ds.).....
Teacher, English and arithmetic.	Oa D.....	Oa C.....	VII.....	(VI.).....
Teacher, mathematics.	.....	P. T.....	VIII.....	Trade, and P. T.....
Teacher, English, social science.	.....	.....	.....	.....
Teacher, trade.....	Trade and VIII.....	Trade.....	.....	P. T. and trade.....

TABLE 17.—Daily program of rooms for classes of girls.

Rooms.	First period.	Second period.	Third period.	Fourth period.
Gymnasium.....	VI and VII.....	VIII.....	P. T. and trade.....	Oa C and D.
Household art.....	Oa C.....	Oa D.....	VI.....	.....
Household science.....	VIII (trade).....	P. T. (trade).....	.....	VII.....
Art.....	P. T. (3 ds.).....	VI and VII.....	Oa C and D.....	VIII (2 ds.).....
Laboratory, physical science.	P. T. (2 ds.).....	VI and VII.....	Oa C and D.....	VIII (3 ds.).....
Trade.....	Trade (VIII).....	Trade.....	.....	P. T. (trade).....
Classroom.....	Oa D.....	Oa C.....	VI.....	(VI).....
Do.....	.....	P. T.....	VIII.....	Trade and P. T.....
Laundry ¹¹.....	.....	.....	.....	.....

¹¹ For use of home-making classes when needed.

No teacher should be assigned to classes for more than three of these long periods per day. This is the same as the customary assignment for six periods in many secondary schools. It will therefore be seen that the program of the teacher of mathematics, English, and social science, Table 13, is too heavy for one teacher. The part-time class should be taken out of his program. There are two cases of this kind in Table 16. It is safe to leave these for adjustment, because Tables 14 and 17 indicate that a sufficient number of rooms for all of the classes have been provided.

The purpose in presenting so many tables has not been to attempt to fix minor details of curriculum and program, but to indicate certain governing principles, to demonstrate the practicability of the plan, and to determine the number of rooms and the kind of working space that should be provided.

From the above it will be seen that one of the greatest advantages of the intermediate school, as above outlined, is the enriched curriculum, with its stronger appeal to the interests of the children. A second advantage is that with the long periods it eliminates rushing from one subject to another without time for concentration of thought on any one. A third advantage is that it insures study under favorable conditions. A fourth advantage is that promotion is by subject instead of by grade, which is a tremendous encourage-

ment to certain pupils who become discouraged and drop out or drop behind under the customary class organization plan for these grades. It helps these pupils to find out what they are best fitted to do. It becomes a practical means of educational and vocational guidance.

COOPERATIVE PART-TIME CLASSES.

It is assumed that the best general education that a public school can reasonably offer for the normal children of Locust Point would come through the all-day courses as outlined above. It is realized, however, that even if such schooling were offered some children would still be taken out of school as soon as the law permits and sent to work in the factories. For this reason cooperative part-time classes should be organized. Under this plan students would alternate between the school and the factories by weeks or by two weeks' periods. Two boys would be employed on a given job in a factory: one would work the first week while the other went to school; the second week they would exchange places. This would insure a worker continuously in the factory and enable both of the boys to continue their schooling. The same plan would apply to girls. The present attitude of the employers at the Point seems to be sympathetic toward a scheme of this kind. One said he would be interested in cooperating in such a scheme if he were in need of boys. Another said it would be a matter of organization to be worked out; he needs more boys. Another saw no serious objection to it. Still another said, "You are on the right track."

From the standpoint of educational policy the objection may be raised that the occupations into which boys of the 14-to-16-year-old period go are for the most part routine jobs. This is true, but it is also equally true that the children are in these jobs and will continue to be in them. The real question is, Shall they be in them with or without the parallel schooling? There ought to be but one answer to this question: They should have the schooling. When the full benefit of some schooling along with work is realized fully the State of Maryland will follow the lead of other industrial States and of England, and will pass a law requiring attendance in a continuation school for at least a small part of each week up to 17 or 18 years of age. Until such time comes, and probably afterwards also, a cooperative part-time scheme is best for the pupil and for the employer.

While one deprecates the fact that 14-year-old children work in routine jobs, there are a few good things that some factories do for some boys that neither their parents nor the school have done for them. If a boy continues at the factory job he learns to work when he would prefer to play; he learns to obey orders promptly; he be-

gins to appreciate the value of money; he becomes aware that efficiency brings higher rewards than inefficiency. For some boys these are about the most important lessons they can learn. Moreover, there are certain children who should be definitely educated for routine jobs, because in these jobs only will they ever become self-supporting citizens.

The larger view to take of the part-time plan is that it provides education for American citizenship and a richer life to those who otherwise would not get it.

Where a boy's work is of such a character that he is learning a first-class trade, the part-time plan becomes one of the most effective types of vocational education. The best that can be done at the Locust Point schools is for the coordinator to seek out the best opportunities for his boys who must go to work, taking their individual possibilities and limitations into consideration and advise them in reference to their changes from one job to another.

In the program for part-time work, Tables 12 to 17, space for only one section of boys and one of girls is allowed, yet it is intended that the part-time work should cover two years. It is believed that when the time comes that more than two sections of part-time students are required there will be a falling off in some other section of the school, thus allowing space for the extra part-time class. The present estimate does not contemplate any large increase in the total number of students in the school, owing to the very limited additional space on the Point available for homes. If this were not the case the number of sections for part-time work should be doubled in planning sufficient space in the new building. If, as is possible, the starting of the part-time plan at the Locust Point school brings students from south Baltimore, there is a possibility that the school might be crowded to provide space for all its part-time students.

THE ONE-YEAR TRADE COURSE.

The all-day trade school has proven a success in several public-school systems; Buffalo, N. Y., is a notable example. The trade courses are usually two or more years in length. On the other hand, some very effective one-year courses have been given.

It is believed that at the Locust Point school a one-year trade course could be made very effective if built upon the kind of course proposed for the sixth, seventh, and eighth grades. The trade course would then be the rounding out or finishing off of the student to enter the trade of his choice. While it would not make him an expert trade worker it would, by combining theoretical and practical instruction, make him an unusually promising beginner at the

trade. He would at least be equivalent to an advanced apprentice at the start, and in a few years ought to be far superior to the average apprentice because of his theoretical knowledge. It is to these trade-school graduates, after they have had practical experience, that the industry will look for men to develop into positions of responsibility in the industry.

Moreover, the proposed one-year trade course is a practical means of prolonging the education of such graduates of the eighth grade as determine to enter trades in which the school can offer special preparation. During the trade-class year each boy would spend half his time in the shopwork of a single trade, whereas in the previous years he would have elementary experience in all the kinds of shopwork the school could offer. The same principles would apply in the trade work for girls. Concerning all-day trade courses for girls, Miss Cleo Murkland has recently said, in a very important report on vocational training for women in industry:

Vocational education for all prospective workers should be assured in all-day vocational courses before entering wage earning, or in part-time courses which supplement occupational experience, and prepare for promotion. While the all-day vocational school or department in most communities serves fewer students than part-time and evening courses, it has been shown that all-day courses tend to lengthen the school attendance of girls contemplating wage earning, and that vocational preparation tends to create a demand for further trade training and education in part-time or evening trade-extension courses."

Concerning the particular trade courses to be offered, it is recommended that some one metal-working trade be selected, for boys and some needle trade for girls. It is probable that with the right kind of teaching staff two or three allied trades could be taught. The theoretical instruction in mathematics and science could then be the same for all, but the practical shopwork would differ.

These trade courses would come under the provisions of the Federal vocational education law, and would, therefore, be subject to partial support by the Federal Government.

INDUSTRIAL WORK FOR SUBNORMAL CHILDREN.

The Locust Point school is extremely fortunate in having the interest and practical cooperation of the Phipps Psychiatric Clinic. The expert service being rendered the school is of greatest value. This report can add nothing. It can merely call attention to the excellent work being done and to the fact that the proposed plan of increasing the industrial equipment of the school would provide

"Vocational training for women in industry;" report of special committee, Miss Cleo Murkland, chairman; National Society for Vocational Education, 140 West 42d St., New York; Bulletin No. 32, p. 156.

additional facilities for the use of these experts. It is suggested that, in addition to the facilities above referred to, in connection with each classroom for subnormal children there be one or two (two would be better) smaller rooms connected with the classroom by sash door and glass partition. These would be fitted up as work-rooms where a special teacher could give instruction to a group of students as occasion demands, and where at other times these same students or a part of them might work by themselves and still be within view of the classroom teacher.

EVENING-SCHOOL CLASSES.

With such a day school as has been outlined for the children of Locust Point it would be practicable and very desirable to establish evening classes, both vocational and general in character. Then the school would be a community school, indeed, and to an unusual degree. Moreover, no additional space would necessarily be required for such classes, and the additional equipment would be inconsiderable. The benefits to the workers in providing opportunity for advancement in their trades, and the benefits to the industries in developing more intelligent employees, can hardly be overestimated. The school would take a new place in the community life if such classes were successfully maintained.

In order to accomplish this, however, the evening work would have to be given under efficient, progressive management, and every teacher would have to be recognized by the workers as an expert in his field. If blacksmithing were to be taught, it would have to be taught by one of the best blacksmiths in Baltimore, who is also a teacher; if shipfitting were to be taught it would have to be taught by an expert shipfitter and teacher; if drafting, by a practical draftsman and experienced teacher. Only in this way can the evening classes be thoroughly successful, and with this principle applied in a business-like way they could hardly be anything short of successful under the conditions proposed for the new building.

It is confidently believed that there are several hundred ambitious young men working in the Locust Point industries who would be very glad to take advantage of such courses, and there seems to be no good reason why such classes should not attract men from south Baltimore also. For some of the men working on the Point but living at a considerable distance, it would be possible to offer classes early in the evening, say from 5.30 to 7.30. For some others the classes should be from 7.30 to 9.30.

Without attempting to state what courses would be wanted, the following may be suggested as among the possibilities:

Shopwork.

Blacksmithing.
 Acetylene welding.
 Copper-smithing.
 Sheet-metal working.
 Electricians' work.
 Machinists' work.
 Pipe fitting.
 Automobile repairing.
 Carpentry.
 Pattern making.

Physical science.

Laboratory course in mechanics.
 Elementary physics.
 Principles of electricity.
 Automobile electricity.
 Wireless telegraphy.

General courses.

English composition.
 Elementary social science.
 Current literature, etc.

Physical training.

First aid.
 Safety first.
 Shop hygiene.

Drafting.

Elementary mechanical drawing.
 Blue print reading.
 Free-hand drawing.
 Pattern drafting.

Mathematics.

Elementary course for machinists and machine operators.
 Advanced courses for machinists.
 Courses for sheet-metal workers.

Recreation.

Basket ball.
 Volley ball.
 Folk dancing.

Home making.

Garment making.
 Dressmaking.
 Millinery.
 Cooking.
 Art needlework.
 Laundry work.
 Household accounts.
 Budget making.

Part III.—THE BUILDING AND ITS EQUIPMENT.

The following statement concerning the building and its equipment is not intended to be complete, but is intended to be of some assistance to the architect who designs the building.

A. Rooms Needed for Division of the School under Classroom Organization—The Elementary School.

Two kindergarten rooms.—It would be desirable to have one of these large enough for all the pupils to play games together, in it at one time. Connected with these should be a toilet for little children and a storeroom for supplies.

Three classrooms for Grade I.

Three classrooms for Grade II.

Three classrooms for Grade III.

Three classrooms for Grade IV.

Two classrooms for Grade V.

One classroom for ungraded boys.—This should be provided with a smaller workroom, separated from the main room with glass partition.

One classroom for ungraded girls.—This should have a workroom connected with it, as mentioned above for boys. If there could be three such workrooms for the two classrooms, that would provide a better arrangement.

One open-air classroom.

Two playrooms.—One for girls and one for boys. (Perhaps one of these might be a covered space outdoors.)

B. Rooms Needed for Division of the School under Departmental Organization—The Intermediate School.

Four study and recitation rooms for 20 pupils each.—All possible blackboard space should be provided in these rooms. These should be provided with chairs and small study tables (occupying a little more, but not much more, space than the ordinary school desks). They are comfortable for a larger range of sizes of people. They can be used for evening classes in blue-print reading, for example, and for a large variety of other evening work. In these rooms, or in a separate room near them, should be space for the storage of a variety of materials used in class work in these rooms.

One physical laboratory for 20 boys.—This should be provided with ample working space and a large amount of storage space. Only a small proportion of the equipment for this room should be the standard physics apparatus of high schools. Instead, the room should have: (a) Various types of machines for use in teaching mechanism—tracing cause and effect through the machine, etc.; and (b) standard measuring instruments used in industry—thermometers, amperemeters, voltmeters, various gauges, etc. Most of the other apparatus should be made by the students in working out experiments or in the shop classes. It is important that there be provided in the room water, sewer, and gas connections; also electric current and air pressure (or a means of producing it).

One physical laboratory for 20 girls.—In general this should be a very simple laboratory for work in the physics, chemistry, and biology for the household. Gas, water, electric, and sewer connections are essential. Ample working space and storage space are also essential.

Two demonstration rooms, each for 20 students.—Adjoining each of the laboratories named above should be a recitation and demonstration room. As the purpose in seating the students is to get them as near as possible to the instructor, these rooms should be provided with armchairs. Water, gas, sewer, and electric connections should

be provided at the teacher's table, behind which, for the teacher's use, should be as much blackboard space as the room will allow.

One drawing-room for 20 boys.—Particular attention should be given to lighting this room well for both daytime and evening work. The tables should be large and open underneath, suitable for mechanical drawing. Locker space and drawing-board space should be provided for both day and evening classes. There should be a blackboard on one side of the room. A storeroom of considerable size should be provided in connection with this room.

One blue-print room.—In connection with the drawing-room it is important to provide a small but well-equipped room for making blue prints. This must have a sink especially for the purpose, fitted with water and sewer connections. It is desirable to partition off a section of the room for a dark-room for photography. This, also, should have a sink with water and sewer connections.

One art room for 20 girls.—While this room should be fundamentally for work in freehand drawing, design, and color, it should also be so equipped that elementary mechanical drawing and home planning may be done in it to advantage. For this reason adjustable drawing stands are desirable for equipment. Blackboard space on one side of the room and ample storage and locker space are needed. Water and sewer connections should be provided for a small sink. This room also should be especially lighted for evening work.

One workroom for 20 girls in household art.—This should be provided with work tables and chairs. Both gas and electric connections should be provided for flatirons for pressing. In connection with this room there should be ample closet space and places for keeping unfinished work.

One fitting room.—Leading out of the workroom for household art there should be a fitting room for use in dressmaking.

One laboratory for 20 girls in household science.—This should be equipped with single or double tables that are reasonably near what the girls can have in their own homes. A sink should be provided for every two or four girls. In addition to water and sewer connections there should be in the room a chimney for a coal range, gas connections large enough for several gas stoves, and electric current for small electric heaters. Ample space should be provided for pantry, refrigerator, dish closet, and storage of supplies. (A small refrigerating machine might take the place of the ordinary ice refrigerator.)

One gymnasium.—This should be a large double gymnasium with folding partition across the middle so as to provide separate spaces for 40 boys at one end and 40 girls at the other. The dimensions ought to be about 50 by 100 feet. On special occasions the partition

would be folded, thus giving one large room for exhibition games and drills.

The gymnasium should be on the ground floor and should have a special entrance. There should be ample light and sunshine in the room.

Shower baths and lockers.—Convenient to one end of the gymnasium there should be space for dressing rooms, shower baths, and lockers for girls, and at the other end the same accommodations for boys.

Swimming pool.—This should be placed so as to be conveniently accessible for either boys or girls. The swimming pool would be a most valuable feature of the building if evening classes were to be established.

One health classroom for 40 students.

Three shops, each for 20 boys.—Table 14 indicates that three shops will provide space for all the classes in the day school, but for convenience and fixing responsibility, especially when the possibilities of evening vocational work are considered, four shops are desirable. The city of Buffalo, in each of its 14 new intermediate schools, is providing for six shops—one each for woodwork, sheet-metal work, machine-shop practice, and printing, and two of the following: Ceramics, electricity, and automobile mechanics. Each of these shops, or "shop units," as they are termed by Mr. William B. Ittner, the architect of these buildings, includes an instructor's room and a general storeroom, in addition to the workshop, which is 26 by 48 feet. The size of these shops has been governed by a desire to reduce them to the smallest size reasonable to meet conditions in a building where only one kind of work is to be done in a given shop.

If only three shops are provided for the Locust Point school, they should be larger than the Buffalo shops (*a*) because in order to provide a sufficiently varied course of instruction two types of work would have to be done in each, and (*b*) because these shops ought to provide sufficient space for trade work both day and evening. For instance, one shop might be used for both forging and sheet-metal work. There would be some economy in not dividing the space into two separate shops, but two separate shops would be more desirable.

Another shop might be fitted up for machinists' work and automobile repair work with some slight saving of space, although there is almost always a shortage of space where automobile repair work is done. What is essentially garage space is needed.

While the Locust Point school plan is hardly comparable with the more extensive trade schools of the country, it may be helpful to know the sizes of the machine shops in some of these schools. A few are as follows:

Pratt Institute, Brooklyn, N. Y.	49 by 80 feet.
Hampton Institute, Hampton, Va.	36 by 105 feet.
Worcester Trade School, Worcester, Mass.	40 by 170 feet.
Dunwoody Institute, Minneapolis, Minn.	44 by 120 feet.
Bradley Polytechnic Institute, Peoria, Ill.	40 by 100 feet.
David Ranken, jr., School of Mechanical Trades, St. Louis, Mo.	47 by 110 feet.

If three shops only are provided they should be as follows:

- Shop 1—Forging and sheet-metal work.
- Shop 2—Machinists' work and automobile repair.
- Shop 3—Woodworking and electric wiring.

In this case shop 2 should be larger than the others, or an adjoining space for a garage should be provided. In connection with every shop there should be a small room for the teacher, where he can keep tools, etc., under his own personal control; also a good stock and store room. Either in the shop or conveniently accessible should be space for a demonstration bench with blackboard and seats for 20 students. Armchairs for notetaking are the best. Sufficient wash room and locker room and toilet space should be provided convenient to the shops. Gas and electric power connections should be provided in each shop.

The details of equipment for each shop should be worked out before the shop is built, so as to be sure that all service pipes and wires reach the proper places for use before the floors are put in.

The shops should be planned as school shops, yet school shops of the practical, producing kind. Whatever is made in the shops should not be thrown away, but should serve some useful purpose in the school or in some other school, or in the home or play of the pupil who makes it; or, and especially in the advanced classes, it should be work for which there would be at least enough financial return to pay the cost of the materials used. Although no student is going to learn a complete trade in the time available in the shops, whatever he does learn should be practical. Correct habits should be formed in the use of tools, and the best industrial methods should be learned. For this reason, the nearer the shop and its equipment can be like an industrial factory, and at the same time provide facilities for the best methods of teaching, the more satisfactory it will be.

One common fault in school shops is a lack of reasonable provision for handling and storing material to be manufactured or in process of construction. Another fault is no provision for expansion or changes due to new conditions of the school. In order to meet these two conditions, as well as the usual problems of shop equipment, it is proposed that the shops for the Locust Point school be placed in a long, narrow, one-story building, 40 by 240 feet, with partitions constructed in such a way that they can be moved without undue ex-

PROPOSED SHOP BUILDING
SCHOOL #76, BALTIMORE

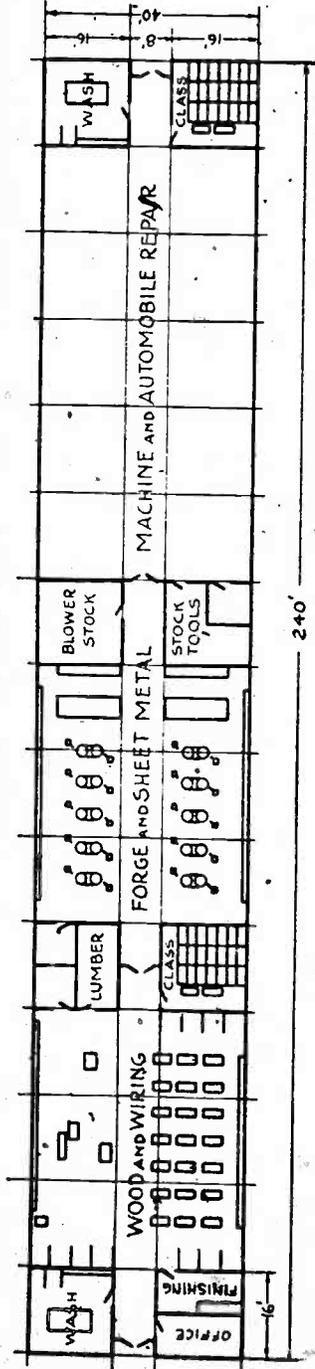


Fig. 1.—This plan is intended to show a well-lighted, convenient, practical, economical school shop building in which productive work may be done to advantage. A part of the equipment is suggested in order to demonstrate that it can be placed advantageously in the space allotted to it. In the "wood-and-wiring" shop benches are on one side and machines and floor space for setting up work are on the other; cases are under the windows. Wiring booths, which may be two stories high, are at the ends of the room. In the "forge-and-sheet-metal" shop the benches for the sheet-metal work are at one end. Several good arrangements of the machine and "automobile-repair" shop are possible in the space designated.

pense. It is proposed that doorways connecting shops be so placed that trucks carrying stock can be run the entire length of the building. The accompanying sketch, figure 1, suggests the floor plan and indicates how readily it might be subject to change of partitions. The sketch showing a section of the building, figure 2, indicates that the windows should be placed 5 feet above the floor and running up to the ceiling or roof. There are three reasons for this: First, it allows the light to come down upon benches and machines in just the right direction; second, it prevents the annoying reflected light that often comes to the eyes from the ground outside the window; and, third, it provides a large amount of needed wall space under the windows for cases for unfinished work, for wall cabinets, for demonstration materials, for charts, for bulletin boards, tool cases, etc. Benches get the best light by being arranged with their left end toward the windows, provided there is good general lighting in front. Machines, of

course, have to be arranged according to the best lighting for use. Single benches are more desirable than double benches that require pupils to work face to face. In some kinds of work long benches, where several pupils work on the same side of the bench, are satisfactory.

All three of the shops should be provided with satisfactory lights for evening work.

If it is not practicable to provide a one-story shop building of the dimensions suggested, a two-story building, 40 by 144 feet, with stairway at each end, would work out satisfactorily. In that case the woodworking and wiring shop and the forge and sheet-metal shop

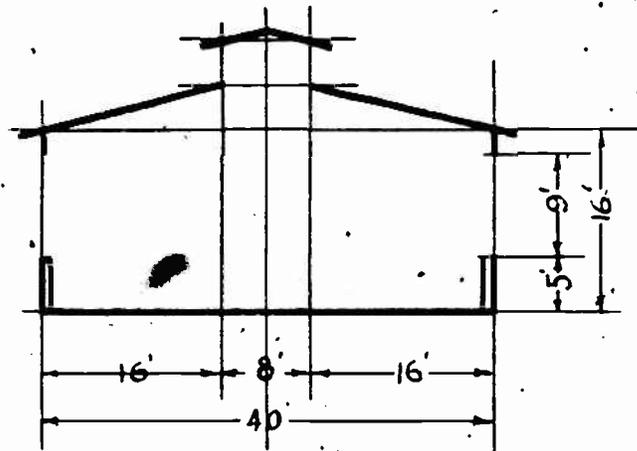


FIG. 2.—Section of the proposed shop building.

should be on the second floor, while the machine and automobile repair shop should be on the first floor. It should be noticed that, to provide satisfactory working space for 20 boys in either of the two kinds of work proposed for each of these shops, the space provided for the two small shops is 40 by 48 feet, while a space 40 by 80 feet is needed for the machine and automobile repair shop.

Two demonstration rooms and two washrooms are provided for the three shops. Each shop should have a teacher's room and a stockroom. There should be an office for the director of the industrial work.

C. Rooms Needed for Use of Both Divisions of the School and for Community Use.

One assembly hall.—This should be large enough for the entire school, including the intermediate school division—800 to 900 people. It should have a stage large enough and convenient for concerts,

lectures, and school plays, and should be provided with a moving-picture outfit.

One civic room.—This might be a rather large lobby entrance to the gymnasium. It would be a part of the equipment of the health and recreation department for the intermediate school. If evening classes were established it would become the central meeting place of the men. On election days it would contain the voting booths.

Five small dispensary rooms.—One each for dental, surgical, general, baby, and tuberculosis patients. These should be connected with a waiting room, should have all needed water, sewer, gas, and electric connections, should have a toilet, and should have a separate entrance to the building.

General office for the school.

Principal's private office.

APPENDIX I.

Comparison of teaching staff of proposed intermediate school with that of the upper grades in the present school as it was about the time of the fire. These figures are only approximately correct.

Present school.		Proposed school.	
Teachers.	Salary.	Teachers.	Salary.
2 Grade VI.....	\$2,000	2 English and arithmetic.....	\$2,400
1 Grade VII.....	1,300	2 Mathematics, English, and social science.....	2,400
1 Grade VIII.....	1,300	1 Physical science, geography, and history (boys).....	1,400
1 Manual training.....	1,300	1 Physical science, geography, and history (girls).....	1,500
1 Cooking.....	1,000	1 Mechanical drawing.....	1,800
1 Sewing.....	600	1 Art.....	1,500
1 Playground.....	150	1 Household science.....	1,600
1 Lunch room.....	600	1 Household art.....	1,500
1 Grade V (not needed under new plan).....	1,300	1 Trade work for girls.....	1,500
	10,450	1 Director industrial training.....	2,400
		3 Shop work.....	5,400
		1 Health (boys).....	1,400
		1 Health (girls).....	1,500
		1 Playground.....	1,000
		1 Lunch room.....	1,000
			20,400

In comparing these figures one should recall that the proposed scheme provides for two sections (40 students) of trade (Grade IX) work, and for two sections (80 students) of Part-Time work, and for 33½ per cent more students in Grades VI, VII, and VIII, on the theory that the enriched offering of the school would hold students in school longer. Beyond these items the difference represents improved quality in the education offered.

APPENDIX II.

A Proposed Scheme for Training Technologists, Executives, and Engineers for the Baltimore Dry Dock & Shipbuilding Co.

Not long ago Mr. Holden S. Evans, president of the Baltimore Dry Docks & Shipbuilding Co., stated that he was interested in developing a plan for educating young men selected from the employees of the Baltimore Dry Docks Co. to become technologists, executives, and engineers. He suggested that he would consider 100 such men an appropriate number to educate, and, furthermore, that the company would be willing to contribute liberally toward the education of these men.

It was suggested that a proposed plan for the accomplishment of Mr. Evans's purpose be outlined and briefly discussed as an appendix to this report. There are two fundamental considerations that enter into such a problem:

1. The men should be self-supporting while pursuing their education.
2. The men must maintain their interest in and connection with the Baltimore Dry Docks Co.

It is believed that a plan providing for the self-support of the men to the extent of their personal living expenses would bring better and more permanent results to both employer and employee than a plan whereby the employer were to assume all financial obligations, even if he were willing to do so. If the employer were to provide free tuition, and perhaps a bonus at the end of each year, or other definite period, conditional on standing in school work and record as an employee, that is all the employer should furnish, providing these would furnish sufficient incentive to effort, and would not lessen the man's self-respect. It is customary for a student to accept free tuition through a scholarship or from the public, but not to accept money for living expenses except from his parents, or from a fellowship that he has himself won.

It is equally important and entirely reasonable that, if the proposition of Mr. Evans is in any sense a business one from the standpoint of the Baltimore Dry Docks Co., while the company is spending its money for the education of these young men, it should take no more than a fair business risk of losing these young men soon after they have completed their education. One way to retain the

men in the employ of the company would be to enter into an agreement corresponding to the indenture of an apprentice.

It is doubtful, however, whether this would bring as satisfactory results, either from the business standpoint, or the educational standpoint, as a plan whereby the employee's interest in the company's work and welfare are maintained throughout the process of education. It is believed that this can be done.

These two fundamental considerations lead to the conclusion that a part-time—probably a half-time—plan of schooling would be the most satisfactory one. By having the men work in the industry half of the time in pairs there would always be a man for the job in the industry and also a man in the school to receive instruction. Both the industry and the school could go on without serious interruption. If a man makes the best of his opportunities for study outside of working hours, and does not spend money wastefully, it is probable that the half-time pay would provide his necessary living expenses.

The first and the greatest educational difficulty in carrying out the plan is to provide a satisfactory means of getting the man through his secondary schooling. It is taken for granted that these men have not graduated from a high school, and that they must first be given a course to prepare them for entrance to the engineering college. There are two reasons why the ordinary public high school is not the best place for such a group of students. In the first place the men would be older than public high-school students pursuing the same studies; they would feel uncomfortable, to say the least, under such conditions.

In the second place, it would not be practicable for these men to enter into all the school activities at the same time and on the same basis as the regular full-time high-school students. They could not afford to be diverted from their study and work to the same extent, or at least in the same way, that has become common in most high schools; yet they should have a sufficient amount of the right kind of physical training and recreation.

In the third place, while this group of students must cover the same essential studies for college entrance as the regular high-school students, they will have to do it in a different way; at first, at least, they need to be taught by different methods. There must be some of the same intensified atmosphere in the school as in the shop; they must have a chance to complete the course in a less number of school hours than is common in high schools. The college preparation of eighth-grade graduates ought by this means to be completed in five years on a half-time basis, possibly less, if it is an all-year-round school. With selected students there is reason to believe that this could be accomplished.

These observations argue for a special secondary school for the 100 selected men.

As to possibilities for such a school in Baltimore, attention is called to the fact that the Market Street building of the Maryland Institute is not used very much in the daytime, that the facilities in this building could with a little adjustment be made satisfactory, and that such a school is in harmony with the aims of that institution.

If 50 out of 100 men starting on such a course could be ready for the engineering college at one time, there is little doubt that the Johns Hopkins University would be willing to make the experiment of taking such a group on a part-time basis—perhaps three months at the factory and three months at the university—provided the extra expense involved in such a scheme were to be met. If the local university could not do this, some other would be glad to do it. In fact, the plan proposed is in harmony with the experience of the engineering department of the University of Pittsburgh, where a cooperative part-time plan has been in operation since 1911. After five or possibly six years of part-time college work a man would receive his degree in engineering.

It is believed that such a plan, carried out by efficient, sympathetic teachers and with the full cooperation of the management of the Baltimore Dry Docks Co., would provide a great opportunity to young men of ambition and ability and would insure to the company the needed supply of trained technologists, executives, and engineers.