

partments of training in the dairy rather than to assign them some specific industrial task.

A third group of boys may be assigned to the dairy on the assumption that this department provides a type of training which would be valuable in their general educational or personal development. These boys may be thought of as not having a permanent place in our particular dairy and perhaps as not even preparing themselves for dairy work outside our institution. They may be thought of as boys for whom the dairy provides an unusually happy situation in which to foster traits or habits, the achievement of which is desired without reference to their becoming dairymen. For boys like these the dairy offers certain occupational tasks which are common to many other industries, and their assignment to the dairy rather than to the carpentry shop is a part of this all-around vocational or industrial preparation. It is, in other words, general rather than specific. It is the difference between learning to read and reading to learn. This group of boys has, therefore, a materially different objective from the other two groups and the training motive is therefore different even though the training content may be similar. This is on the assumption that the motive behind education or training exerts a different influence upon the entire educational program of each individual. The fact that the training rather than the work accomplished is the object of the assignment should, we think, make an important difference.

This study, then, was undertaken in order to evaluate the industrial and educational possibilities of our dairy as an occupational, industrial, or training assignment. In order to evaluate the situation we made, first, a study of the department with reference to its organization, and second a study of the boys assigned to the dairy with reference to their capabilities and social outlook. Our study was further designed to evaluate the possibilities of systematic training as opposed to general training, and also to evaluate the correlation of abilities in the operatives as compared with their performance in the task. It seemed conceivable that a careful analysis of the work compared with an equally careful analysis of the workers might reveal ways and means of increasing the efficiency of both and lead to a more effective method of assignment and training in this occupation.

The administrative organization is important for

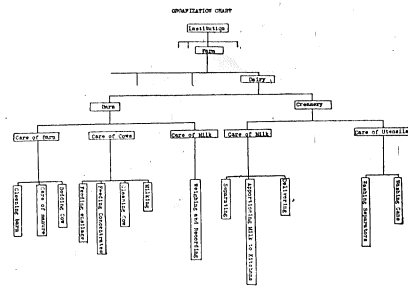


Figure 1

the purpose of orientation. Figure 1 shows this organization. The farm is an executive department of the institution, and the dairy is a subdepartment of the farm. The dairy has two "shops," namely, the cow barn and the creamery. The work in the cow barn comprises three principal jobs, namely, care of the barn, care of the cows, and care of the milk before it leaves the barn. The creamery has two principal jobs, namely, care of the milk and care of the utensils. These jobs are further subdivided as to unit operations, as indicated on the chart.

This analysis immediately pictures the extent and limitations of this field of work as organized. It shows the specific "layout" for this particular dairy. This dairy is larger than some but not so large as others. Even a little familiarity with large commercial dairies will suggest important differences. It is at once obvious that the training possibilities in this dairy do not fully represent the work of the standard commercial dairy. For example, we neither pasteurize nor bottle our milk. On the other hand, we milk both by hand and by machine. Obviously a person receiving training in this dairy would gain only a general familiarity with the industry of dairying and would master only some of the operations common to all dairies. Such a person after training could probably adapt with but little difficulty in a dairy of a markedly larger organization and could find some place of employment. It might now be a question of administrative policy as to whether this dairy should be extended in all representative operations so as to make possible all phases of dairy training, such

as the manufacture of butter, and the keeping of commercial accounts. One can accept the situation as it is or one can expand or curtail, according to one's educational ambitions.

The stage of analysis at which one rests may be a matter of convenience. Thus, one may consider the care of the barn as a job, and the bedding of the cows as a unit operation, or one may conceive of the bedding of the cows as a job, in which case the unit operations would be derived from a more minute analysis. The extent of the analysis depends somewhat upon the degree of specialization, and the degree of specialization depends on the extent of the industry. As a general rule the larger the industry the finer the specialization so that what is a job in one industry may be a unit operation in another.

Job Specification

In order to clearly understand the requirements for each job or unit operation, from a psychological point of view, it is next advisable to indicate the demands which the job makes on the operative with reference to such personal characteristics as intelligence, physique, education, personality and so on. In a scientific system of classification and training a child should not be put in training for which he lacks the necessary native abilities unless, indeed, the training is intended to develop those abilities. In continuing this dairy analysis we therefore prepared a job specification card on which could be checked the requirements for each of the jobs or unit operations outlined on the lowest level of the organization chart. In this initial survey only rough estimates of these requirements could be obtained.

Figure 2 gives a general summary of the principal requirements for each of the jobs in this dairy as now organized. At first glance these requirements do not seem very precise. This is partly accounted for by the fact that the survey was not based upon refined measures. In this table an intelligence rating of 1 was assigned arbitrarily to mental ages below 5; intelligence rating 2 was assigned to mental ages 5 and 6; rating 3 to ages 7 to 10 inclusive; rating 4 to ages 11 and 12; and rating 5 to ages above 12. The ratings assigned to the jobs were determined by the dairyman on the basis of his experience with children of known mentality and known success in the various jobs.

UNIT OPERATIONS	REQUIREMENTS FOR UNIT OPERATIONS									
	INTELLIGENCE	PHYSIQUE	SKILL	LITERACY	RESPONSIBILITY	CLEAN	CAREFUL	ORDER	PERSONALITY	DEPENDABLE
Cleaning barn	2	2	0	0	+	+	+	+	+	+
Care of manure	2	2	0	0	+	+	+	+	+	+
Bedding cows	2	2	0	0	+	+	+	+	+	+
Feeding manure	2	2	0	0	slight	+	+	+	+	+
Feeding manure	2	2	0	0	slight	+	+	+	+	+
Cleaning cows	2	2	0	0	slight	+	+	+	+	+
Milking	2	2	0	0	slight	+	+	+	+	+
Feeding and Pasturing	2	2	0	0	slight	+	+	+	+	+
Separating	2	2	0	0	slight	+	+	+	+	+
Apprenticing	2	2	0	0	slight	+	+	+	+	+
Feeding utensils	2	2	0	0	slight	+	+	+	+	+

Figure 2

It is not our point to justify the conclusions of this dairy analysis but merely to use it as an illustration of the principles involved. The details of the ratings on the other traits may, therefore, be omitted here. It is sufficient for present purposes to indicate merely the relative estimates of different abilities for different tasks. In this connection it is hardly necessary to say that the unit operations in this dairy are not highly specialized and therefore the range of abilities required is not very finely drawn.

It will be seen from this table that for some of the jobs physique is more important than intelligence, while in other jobs the reverse is true. In some operations literacy is imperative while in others it is not needed at all. The range of skill varies from employment of the grosser muscles to refined co-ordinations. The work varies in the degree of responsibility and of certain so-called personality traits, such as dependability, cleanliness and carefulness, required.

Abilities of Operatives

In order to correlate placement for training with the requirements necessary for successful job operation, we now enter the second stage of vocational analysis, namely, a description of the abilities of the persons assigned. In this dairy each boy has been studied with reference to his age, his performance on certain mental tests, his physique, his literacy and his personality traits. Since this study was based on persons actually receiving training, individual ratings of their general efficiency were obtained by means of individual classification cards, as well as from statements regarding the duration of their training in this department.

The results of the individual studies are presented in Figure 3. It will be noticed from this table that