As a corporation grew to very large dimensions every branch of the management became technical and required the supervision of specialists. For example, in a small company the rates charged for services or the prices of commodities can be set by the board of directors, who need for the purpose only a small amount of technical knowledge. But when the corporation has reached the size indicated by a hundred million dollars of invested capital and a hundred thousand or more employees, the determination of rates to be charged for services or commodities becomes so complicated that it can be handled only by specialists. This is particularly true if the corporation is engaged in public service and is obliged to negotiate with a government commission before setting its rates for services or for the pay of its employees. Under such circumstances the only subject on which the directors could act from personal knowledge would be finance. The management of the company is necessarily left to the officers and the corps of specialists reporting to these officers.

In the last few years a number of public service corporations have adopted the method of raising new capital by selling securities through their commercial department directly to the public. The amount sold by this method to each person is usually limited. By this means the stock tends to become even more widely scattered. Usually an effort is made to have as many of the company's customers as possible holders of the securities. The success that this method of financing a corporation has obtained indicates that at some time in the near future many public service corporations will secure all their needed capital in this manner.

When this last development has been attained we shall have a very interesting situation. The stockholders meeting will long since have become a mere legal ceremony. A sufficient number of proxies is always sent in by the stockholders each year to give the administration the overwhelming control of the meeting. The administration nominates and elects its candidates for the board of directors. Except for the occasional change in by-laws little else is done at one of these meetings where a mere handful of stockholders is in attendance.

With the increasing complexity of the business and the increasing ability and skill of the departments of all kinds, including finance, commercial and personnel, the directors will find that they are left only the job of electing officers (whose names in most cases have been suggested by officers actually managing the company's affairs) and filling vacancies on their own board. When this stage is reached the board of directors is likely to fall into the same class of legal nonentities that the stockholders have become.

In some large corporations the tendency is to select as directors men of influence in their community. Such men have been considered valuable in helping to prevent undesirable legislation and a hostile attitude from the public. Naturally such men are likely to be wholly incompetent to assist in the actual management of the company. But public relations is also becoming a technical subject which can be handled intelligently only by specialists. To rely upon the influence of a prominent coal dealer, lawyer, banker or mill owner is becoming obsolete.

What then are the characteristics that a member of the board of directors should have? If a director of a large and well-managed railroad were familiar only with the various branches of the retail business, his managerial advice would be of little value to the railroad. On the other hand, if he were thoroughly familiar with one or more of the large departments of the railroad and a recognized authority on the subjects involved, his managerial advice would have considerable value. This does not mean that the board should be limited to those who are specialists in such matters as maintenance of way, railroad accounting, design of rolling stock and assignment of rates. For in the imaginary company we are considering there would be the need on the board of directors of men who have given the major part of their time to the study of economics, banking, finance and personnel relations. We therefore come to the conclusion that a board of directors should have such a membership that at least one member can always be found who can speak with authority on any one of the great primary elements that are involved in managing the corporation. In a large corporation, if well managed, the heads of departments represent just such an assortment of talent and experience. The Dennison Manufacturing Company's solution of this problem is to elect only members of its organization to the board of directors. In this case the members of the board are managers of the company. They can speak by virtue of personal knowledge concerning all phases of the business and can act upon their own initiative concerning the policies of the company. Perhaps we have here in the Dennison plan a stage in the evolution which ultimately will require that the board of directors shall consist only of the heads of the important departments. The members of the board would then themselves execute their decisions.

How the board of directors will be elected in the

future and what will occupy their attention is interesting, but is only indirectly concerned with the subject of the present discussion. For it is clear that as the board of directors either becomes nominal or becomes a part of the organization, that the last vestige of a rigid inspection from an outside source will have passed away. The organization consisting of the supervising officers will be left alone to carry on the business. Their own personal welfare and patriotic loyalty to their profession will be the only motives that will make them work for the progress and improvement of the business.

It is therefore important that every safeguard should be used to make the organization as efficient as possible. Also such efforts should be made while the board of directors and stockholders are still in close touch with the supervision of the corporation, in order that the modified type of organization may have time to become well developed before it is required to take the burden heretofore taken by the stockholders. Naturally such safeguards are of little value when a corporation is small and well supervised. But as it grows larger and the supervision for various reasons becomes more lax, then devices intended to supplement the care superior officers take of their subordinates are of increasing value. Obviously they will reach their maximum value when inspection from outside sources will have ceased to operate.

We have seen that a corporation is like a huge system of railroads converging upon a single terminal. If a superintendent of a division fails to give proper supervision, then that part of the track will be handicapped and may be below standard in efficiency. All subsidiary tracks that converge toward the tracks on this division will also be more or less obstructed. Yet the system as a whole may be operating fairly smoothly. Years may elapse before the troubles that hamper trains in passing over this particular division are discovered and removed. But a modern railroad system has also a series of block signals. When something is wrong on a section of a track one of these signals becomes red. It does not indicate the exact nature of the trouble, which may be a broken rail, a washout or a train on the track. It merely indicates that if you want to use the track to its fullest capacity you must give it a careful inspection. We therefore want some similar device in our organization so that a danger signal calling for inspection will be given when a captain fails in his duties toward his company and when at the same time the major fails to investigate conditions in his battalion.

The large corporations have then apparently the serious difficulties to overcome in the near future. One is the proper selection of members for the board of directors and the other is overcoming the weaknesses inherent in a military type of organization.

Let us consider the latter difficulty. We shall use military titles, because every one knows the army sequence of authority. In industries titles are used with very different meanings. Sometimes a superintendent reports to a manager and sometimes a manager will report to a superintendent. So to avoid misunderstandings we shall assume that industrial corporations are using military titles. We shall then be sure that we are describing a sequence of authority that will be familiar to everybody.

Just as a chain is as strong only as its weakest link, so in some respects the military organization of a corporation is as strong only as its weakest supervising officer. In theory the colonel supervises the majors who in turn supervise the captains. That is, the superintendent supervises the assistant superintendent who in turn supervises the foremen. Or the general sales manager supervises the district sales managers who in turn supervise the local sales managers. But in practice this supervision is very frequently superficial. The major takes the captain's word for the condition and activities of his company. In industrial language the superintendent trusts the reports of his assistant superintendents concerning the condition and activities of the various departments presided over by the foremen. If he makes an investigation it is more or less like a dress parade. The information he gets is perfunctory and may be misleading. If he talks with a foreman he hears only what the foreman thinks the assistant superintendent would like to have said. The activity of the department is often judged by its cost records. The more satisfactory these records are in the opinion of the superintendent, the less attention the department gets. In most cases in factories in the United States there are no cost records that are reliable. Under such circumstances so long as a department works in harmony with those that precede and follow it in the sequence of operations, it is often ignored by its supervising officer. Sometimes a group of employees are ignored for other reasons. The colonel is overburdened with work given him by the general and trusts that his majors are keeping in close touch with the work of the companies. But a major may himself be overburdened with work given him by the colonel or assigned to him according to the routine of the organization, or he may be lazy and careless. In such cases he